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American Bee Journal

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Gentlemen:—The queen you sent me came in good condition. She was one of the best I have ever bought. I have her introduced and she is doing business as if to the manor born. I want another of those beautiful queens as soon as I can possibly get it for making up my fair exhibit. Please send a fine one. Such queens certainly advertise your business.

Darlington, Wis., July 31, 1912. C. R. BRIDGMAN.

AMERICAN BEE JOURNAL—

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Yours truly,
Portales, New Mexico, July 10, 1912. J. W. HOUTZ.

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American Bee Journal, Hamilton, Illinois.

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C. P. DADANT, Editor.
DR. C. C. MILLER, Associate Editor.

HAMILTON, ILL., AUGUST, 1913

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EDITORIAL COMMENTS

Ordering Queens from Europe

A number of our friends have written asking that Mr. Dadant take orders for queens to be sent to them from Europe. He has not gone there to buy bees. He goes only to examine the bees of different countries and report in the American Bee Journal in as impartial manner as possible. He hopes to make his information useful to all the bee-keepers of America.

Distance Drones Fly

Lehrer Kiefer says, Pfälzer, Bztg., page 6, that in 1871 some 70 to 80 colonies of Italians were at Steinwenden, and no other Italians far and wide, yet June 15, at Schwedelbach, 3 miles distant in a straight line, where there was an apiary of pure blacks, not a few Italian drones were seen flying in and out of the hives. It is generally believed, is it not, that queens fly farther than drones? If that be so, it seems there can be no certainty against impure mating if other bees be within 6 miles. For all that, it may be true, as some claim, that generally drones and queens do not meet at a greater distance than 1½ or 2 miles.

Size of Magazines

The popular magazines are in general of two sizes: a large size about 16 by 11 inches, and a small size about 10 by 6½. Until very recently the American Magazine was of the smaller size. Its publishers realized that with this form some desirable results could not be obtained, especially in the way

of illustrations. But to enlarge to 16 by 11 would give the unwieldy size of the Ladies' Home Journal, Woman's Home Companion, etc., a size especially disliked by many readers.

After much experimenting of a somewhat expensive character, the American Magazine has settled upon 12½ by 8½ inches as the ideal size and form for best results, and has received many congratulatory letters from delighted readers upon this change of form. The special point of interest in the matter is that for years, without any parade about it, the American Bee Journal has been appearing in its present well-known form, which is precisely the same in width as the American Magazine, and only ½ of an inch shorter. Whatever other improvements may be striven for, perhaps there is no chance for improvement in the matter of size. When bound it makes a book of the same size as the Century Dictionary.

Crosses of Bees

In Pfälzer Bienenzeitung it is asserted that the first cross of two different races of bees is more vigorous than either of the parent colonies, but that with the second generation degeneration begins. The first part of that assertion has been the generally received opinion in this country for many years. J. E. Crane does not keep pure Italians, but constantly introduces pure Italian blood, from which he rears young queens to meet his dark drones. Thus he has a first cross for a working force, one of the parents being of pure stock.

That there is degeneration after the first generation is likely true where bees are left to their own devices, but there are not wanting those who claim to keep up the vigor of the first generation, and even to improve upon it by careful and continued selection in breeding.

Moth and their Development in Combs

An interesting discussion has taken place in "L'Apiculture Nouvelle" concerning the presence of moths in combs. Mr. Audrain holds that if the frames contain combs of pure wax only, without pollen, there is no danger of moths. He reported having repeatedly kept combs all summer where the moths could have access to them, without danger, whenever these combs were free of pollen. Foloppe Brothers, who are very accurate observers, take exception to this statement, and hold that although the moths need nitrogenous food in order to develop, they may find such food in other matters than pollen, as in the dejections of the bees, or in the wood of the hive.

It is true that moths need nitrogenous food to perfect their development. They can live but a short time on wax. As Mr. Audrain states, they cannot live on cakes of pure beeswax. But if two cakes of wax are laid flat on one another and they contain some residue, whether this be propolis, dead bees, cocoons or pollen, the moths may harbor and thrive in them, and will bore their way quite deeply into the wax. We have seen thin cakes of wax shipped to us from the warm southern countries pierced through with the galleries of the moth.

Our comb-honey rearing bee-keepers who know the bad effects of a single moth larva upon filled combs are convinced of the necessity to protect these

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combs entirely from any incursions of wax moths.

Dry, clean, new combs may be preserved in comparative safety, if exposed to air and light. In a honey-room combs may be hung safely between the joists, if not placed close enough together for the larvæ to reach from one to another. But old combs, whether they contain pollen or not, will be surely riddled, if left where the moths may reach them.

In the climate of Illinois, where the thermometer reaches down to -20 degrees Fahrenheit, combs that are preserved through the winter in a room without fire will be entirely free from moths. It is only where the combs have been protected from the cold, in colonies that live through, or in hives of which the bees have died at the end of winter, that the moths reproduce. So the careful bee-keeper who does not leave any combs exposed in beeless hives with entrances open during the warm season, and who does not bring into his bee-house any combs of doubtful origin, needs fear the moths but little. However, when his comb honey is harvested, it will be advisable for him to use sulphur or bi-sulphide of carbon from time to time, as the eggs of the moths may hatch in some corner and soon do a great deal of damage.

The progressive bee-keeper who looks after his bees and his empty combs, his sections of honey, etc., finds the moth a blessing instead of a curse. Were it not for the moths, the combs of hives that have died from foul brood, in neglected apiaries, would remain a constant danger. The moths remove that danger before the season is over.

A Letter from the Editor

Here we are at Rouen, one of the oldest cities of France, after 10 days of absence from home. We had a fine trip across on the "France"—six days and two hours on the way. No bad weather, though we had rain and a little swell one day.

Here, in Rouen, lives Mr. Crépieux, who was the editor of the International Review of Bee Culture after Mr. Bertrand. He is now a contributor of *L'Apiculture Nouvelle*. He has 60 colonies 4 miles from Rouen, and in 1911 harvested nearly 8000 pounds of white honey, mainly sainfoin (*Esparcel*), wild mustard (*Sinapis arvensis*) and basswood. He says the bees get nothing from white clover here, but when we went to his country place, I saw a number of bees on the white clover, and it looked very much as if they were getting nectar from it, for they stopped

quite a while on each bloom. He has a two-story house apiary open on the north and the south. He ascertained that the bees of the lower rows suffered more in winter flights than those of the upper rows, but found very little difference between a north and a south exposure.

We must remember that they have a mild winter here; that ice rarely gets over 3 inches thick. Their experience is that the bees take flight at 48 degrees Fahr., and not at a lower temperature. Of course, this is *in the shade*, and as the sun is much stronger in Illinois, probably his tests would not work with us.

Mr. Crépieux is a very eminent graphologist. His testimony, in the recognition of handwritings, in courts, has often been quoted as almost infallible.

The honey crop is already quite good, many supers being filled, but I am told that this is not the rule throughout the country this year. I will learn more as I go.

I had the honor and pleasure of meeting here the renowned Dr. Carlton, the man whom we quoted in the American Bee Journal of September, 1912, as naming alcohol, sugar and meat the "three deadly foods." He is a vegetarian, and very interesting to hear, though many of us might not agree with his views, expressed in forcible language, and very clearly. He is a bee-keeper, and has his own explanation concerning the general spread of foul brood in the United States. This is based on his studies of bacteriology at the Pasteur Institute of Paris in 1900. He has promised me an article, which will surely be interesting. He is the author of several works of note on medical subjects.

If this magazine were not a special publication, I might digress from bee-culture and tell about "old Rouen." It is a beautiful city with about 80 churches, some of which are magnificently sculptured. But the *old* part of the city is horrid. Imagine streets where two cannot pass side by side, where you can touch both walls without much stretching the arms, where houses, built 400 or 500 years ago, have bulged out so as to threaten falling, and have been braced with iron plates and bolts, which already show the rust of centuries.

Magnificent sculptures are found behind the most disgusting looking walls, and priceless ornaments of stone look down upon dark, narrow lanes. To an American these things look more like

a dream than the reality.

We visited in Rouen the square where Joan of Arc was burnt at the stake. Fresh flowers are almost constantly brought to the foot of her statue by enthusiastic admirers. The exact spot where she was burnt is shown by a marble slab in the pavement.

July 5.

Robbing

July and August are the worst months for robbing in this latitude, especially when there is a dearth after a heavy crop. Bees do not appear to ever be satisfied with plenty, and a wealthy colony will mercilessly rob a weak or queenless one.

Prevention is better than cure. Weak colonies should be carefully watched, the entrances kept sufficiently reduced to enable them to defend their combs. The combs that the colony cannot cover should be removed, or it is well to strengthen it by exchanges of dry combs for combs of hatching bees from populous colonies. In case of robbing, a weak colony of bees may readily be put in shape to defend itself by giving it, late in the evening, a quart or so of young Italian bees which never yet had a flight. The Italians are much better than our common blacks to fight robbers and keep out the moth. After supplying young Italians to a weak colony, you will see them act as guards, the very next day.

A bunch of loose grass, thrown over the alighting-board, at the entrance, is often sufficient to enable the hive-guards to defend the colony, for they station themselves among the blades and easily arrest the intruders, unless the colony is completely demoralized.

Colonies that have swarmed must be examined to make sure that they have a laying queen, else the robbers and the moths will make short work of them.

Early Queens

We had so many evidences that queens reared very early are poor, that we gave up trying to rear them until the starting of the clover flow. That makes it pretty late. With us the clover harvest is likely to begin some time during the first ten days of June. Suppose it begins the 5th, and on that day a young queen is started from a larva a day old. She will hardly be laying before June 30. That seems a long time to wait, if in the meantime one or more colonies go queenless. Better, however, to wait until that time than to have a worthless queen. To be sure, it sometimes happens that by

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accident or otherwise a queen is missing, and the first we know of the case, is that a virgin has been reared by the colony. It seems too bad to kill such a virgin, but if it is very early her death is the best thing for us if not for her. When we yield to the temptation to spare her life, we are likely to regret it.

We had one case of that kind this year. April 22, upon opening No. 66, we found no unsealed brood. Instead of breaking up the colony at once, we temporized by giving it a frame of brood in all stages. The hive was not opened again for 15 days, when a fine-looking virgin was found. Instead of promptly dispatching her, we again yielded to temptation and spared her. Eleven days later she was found in the hive, just as handsome as ever, and laying just as many eggs as ever—that is, none. As she was then probably 2 weeks old, the chances were that she would never amount too much, and as a ripe queen-cell happened to be on hand, the queen was given her quietus and she was replaced by the cell. Eighteen days later we looked to see if the young queen was laying. A few scattering eggs were found, and then a patch of drone-cells in which we found

eggs, 4, 5, or more to the cell. That settled it. Laying workers!

This is not a thing to be proud of and is not held up as an example for imitation, but as a frightful warning. Here were 2 weeks foisted away in the vain hope of rearing a queen ahead of time, the bees doing nothing but dwindling all the time. If we had broken up the colony in the first place, giving the bees to other colonies, instead of dwindling away, they would have increased perhaps double.

Within the past few years dandelions have increased to such an extent that one ought to be able to rear queens during its bloom, especially with the aid of fruit bloom. We made a little effort at it this year. May 7 the start was made, and of the cells started we utilized 6. Just half of these were failures; the other half succeeded to laying queens. How good these queens are remains to be seen. But we are not greatly encouraged about rearing dandelion queens, and may have to be satisfied if we can succeed in having young queens laying about a month after the very first clover blossom is seen.

We believe more and more that the South is the country for early queens.

cover we reproduce a photograph of a typical apiary in Illinois. Mr. L. L. Ness, the owner, is a progressive bee-keeper. He keeps only Italian bees.

The Panama-Pacific Exposition.—Mr. Thomas G. Stallsmith, formerly of Ohio, has been appointed Chief of the Department of Agriculture at the Panama-Pacific Exposition. Under his jurisdiction will come the department



THOS. G. STALLSMITH, OF THE PANAMA-PACIFIC EXPOSITION.

of Apiculture. In a recent letter to this office, Mr. Stallsmith announced that this was to be one of the strong departments of the Exposition, owing to the fact that the California bee-keepers are already discussing the placing of exhibits. Any one who is at all interested in obtaining information about exhibits would do well to get in touch with Mr. Stallsmith. Letters may be directed to him at the Exposition Building, San Francisco.

The Exposition will be held from Feb. 20 to Dec. 4, 1915.

MISCELLANEOUS NEWS ITEMS

Rearing Queens from Foul-Broody Colonies.—The following suggestions were received from a correspondent in California. There is no little danger from letting such a statement go unchallenged. It was referred to Dr. Miller for his opinion. We append the inquiry and the editorial on it:

"Did you ever stop to consider that it would be impossible to rear queens in an apiary that was affected with foul brood?" How could the larvae or the cells be accepted if the brood from which it was taken be so impregnated in any way with this disease? The queens would manifest this as readily and as quickly as the brood. The queen-breeder must surely have his colony (breeding queen) absolutely free from this pest or he would never for a moment be able to rear a single queen.

It is not the intention of the writer to create any argument, but on the surface it looks very plain and clear that a queen rearing or breeder would have to close up if foul brood was prevalent in his apiary.

It would be a fine thing if it were true that "it would be impossible to

rear queens in an apiary that was affected with foul brood." In that case there would be no temptation for an unprincipled queen-rearer to send out queens, and there would be no danger of spreading disease in that way.

Unfortunately, larvae in queen-cells follow the same rule as larvae in worker-cells; some of them are affected and some are not, and whatever proportion of worker-larvae come to maturity just that proportion of queen-larvae may be expected to come to maturity. So in an apiary badly affected by foul brood just as many queens can be reared as in a healthy apiary. To be sure, not so many virgins can be reared from the same number of cells; but the queen-rearer is not restricted in the number of queen-cells started. If half his cells fail, all he has to do is to start double the number of cells.

The question is: Would any honest man send out queens from a diseased apiary?

C. C. M.

Our Front Cover.—On our front

Fined for Failure to Have Bees Inspected.—An apiarist of southern California has paid dearly for failure to observe the ordinance of Tulare county in regard to the bringing of bees in that county. He shipped three car-loads of bees into Tulare county, and proceeded to station them amidst the orange groves.

No notice of the shipment was given the inspector of apiaries of Tulare county, as required by the ordinance. Hearing of the arrival of the bees, the inspector filed a criminal complaint against the owner, who was very much

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astonished to find that the penalty for shipping bees into the county without notifying the inspector is a fine of not less than \$300. However, he pleaded guilty, and was fined the full sum.

Autobiography of A. De Rauschenfels.—The following is an autobiography of A. DeRauschenfels, retired editor of *L'Apicoltore*:

You desire the story of my life. I have no marvelous record in the aparian field. I have not discovered any fundamental law; have not invented any new hive or implement; neither have I kept as many colonies as your great American producers have done, but I take pleasure in responding to your courteous request.

I was born Feb. 28, 1828, at Lienz, in the Austrian Tyrol, and received my education in the University of Innsbruck. In 1847, the words: "Monarchy is in peril, all Italy to arms," caused my departure for the army with my fellow students, and I was enlisted in the regiment of Imperial Tyrolese Cacciatores. I fought in the streets of Milan in 1848, and the following year

raised my apiary to 100 colonies, and later to about 200, a very large number, at that time, in Italy, for a follower of rational bee-culture, which was yet in its infancy.

I soon began contributing to *L'Apicoltore*, the organ of the Italian Association. I also wrote for a German journal, discussing questions of opinion, such as the best hives. For a long time I was in favor of the vertical hive (high and narrow), which was almost the only hive used in Italy. When your regretted father, Charles Dadant, brought to our notice the modified form of the Langstroth with Quinby frames, we hesitated to adopt it. It was difficult to change large apiaries. In May, 1874, Charles Dadant was writing us: "Will the hive of my choice ever become popular in Italy? I cannot say, but I do know that those who try it will not regret it." He was right, the hive now known in Italy as the "Dadant hive" has proven its superiority over all others.

In January, 1888, I assumed the editorship of *L'Apicoltore*. Simplicity and economy have been my motto. I believe that two-thirds of the implements that are called indispensable are

unnecessary in the management of bees.

In 1901, I published "The Bee and Its Culture," with an "Atlas" of bee-keeping, and both before and after I also published a Compendium of Bee-Keeping. On Dec. 31, 1912, after 25 years, I retired from the editorial chair. ANDREA RAUSCHER VON STAINBERG UND RAUSCHNFELS. Noceto, Italy, May 31.

Old-Time Advice to Bee-Keepers.

The following is an extract sent us by one of our readers, and copied from an old agricultural publication dated 1827. In those days, evidently, they had no conception of out-apiaries, nor even home-apiaries, nor of honey by the carload. They did not follow the motto, "Keep more better bees."

TO MANAGE BEES ON MR. COBBETT'S PLAN.

The best hives are those made of clean, unbleached rye-straw. A swarm should always be put into a new hive, and the sticks should be new that are put into the hive for the bees to work on; for, if the hive be old, it is not so wholesome, and a thousand to one



A. DE RAUSCHENFELS.
(Photograph by Arnaldo Cotti.)

in the battle of Novara. In 1852, I was promoted to the rank of officer, and in the barracks saw the dark side of the life of a soldier. I concluded that this was not the right pursuit. I resigned and established myself in the "garden of Europe," as is called this country of rich plains and admirable vegetation, which produces everything, from the knotty oak to the palms of the Orient.

Living in the country, I was attracted by apiculture. In 1869, after having read the works of Dzierzon and Berlepsch, I commenced bee-keeping with 6 colonies, which I transferred from the common village hive into movable-frame hives of the German pattern. In a few years, with the addition of natural swarms, artificial divisions, and the purchase of more common hives, I



NO. 1.—CLIPPING QUEENS.

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No. 2.—CATCHING THE QUEEN AS SHE ISSUES WITH THE SWARM.



No. 3.—THE CAGE WITH QUEEN IS TIED TO A BRANCH.

that it contains the embryos of moths and other insects injurious to bees.

Over the hive itself there should be a cap of thatch, made also of clean rye-straw, and it should not only be new when first put on the hive, but a new one should be made to supply the place of the former one every three or four months; for, when the straw begins to get rotten, as it soon does, insects breed in it, its smell is bad, and its effect on the bees is dangerous.

The hives should be placed on a bench, the legs of which mice and rats cannot creep up. Tin around the legs is best. But even this will not keep down ants, which are mortal enemies of bees. To keep these away, if they infest the hive, take a green stick and twist it around in the shape of a ring, to lay on the ground, around the leg of the bench, and at a few inches from it, and cover this stick with tar. This will keep away the ants.

Besides the hive and its cap, there should be a sort of shed, with top, back, and ends, to give additional protection in winter; though, in summer, hives may be kept too hot, and in that case, the bees become sickly, and the produce light.

The situation of the hive is to face the southeast; or, at any rate, to be sheltered from the north and the west; from the north always, and from the west in winter. If it be a very dry season in summer, it contributes greatly to the success of the bees, to place clean water near their home, in a pan that they can conveniently drink from; for if they have to go a great way for water, they have not much time for work.

It is supposed that bees live only a year; at any rate, it is best never to keep the same stall or family over 2 years, except it be wanted to increase the number of hives. The swarm of this summer should always be taken in the autumn of the next year. It is whimsical to save the bees when the honey is taken. They must be fed; and, if saved, they will die of old age before the next fall; and though young ones will supply the place of the dead, this is nothing like a good swarm put up during the summer.

A good stall of bees; that is to say, the produce of one, is always worth about 2 bushels of good wheat; the cost is nothing to the laborer. He must be a stupid countryman indeed who cannot make a bee-hive; and a lazy one indeed if he will not if he can. In short, there is nothing but care demanded; and there are very few situations in the country, especially in the south of England, where a laboring man may not have half a dozen stalls of bees to take every year. The main things are to keep away insects, mice, and birds, and especially a little bird called the bee-bird; and to keep all clean and fresh as to the hives and coverings. Never put a swarm into an old hive. If wasps or hornets annoy you, follow them home in the daytime; and at night kill them by fire or by boiling water. Fowls should not go where bees are, for they eat them.

Canadian Bee Journal Changes Hands.
—We received a short time ago the

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June number of the Canadian Horticulturist. This paper purchased recently the Canadian Bee Journal, which it has merged with the Horticulturist, making one paper under title of the Canadian Horticulturist and Bee-keeper. This paper is the official organ of the Ontario Bee-keepers' Association, and contains summary reports from the secretary, Mr. Morley Pettit. Its June number has several pages of articles and reports devoted to bee-keeping.

The Token from the National Bee-Keepers to N. E. France.—Those who subscribed, in February, to the fund for a present to Mr. France, will be

glad to hear that a leather arm-chair, with a sterling silver plate inscribed with dedicatory words, was purchased and sent to Platteville. As there was a larger sum than needed, the balance was sent to Mr. France, who now reports that he added enough to buy a similar chair for his faithful wife. He writes, under date of June 18:

"We feel proud of these presents, and hope to enjoy many comfortable evenings in them.

"Just now we are having a fine honey-flow from clover, with prospects of a continuation for some time. Basswood also is well budded. Wife and I wish Mr. and Mrs. Dadant pleasure and good health on their eastern journey."

BEE-KEEPING FOR WOMEN

Conducted by MISS EMMA M. WILSON, Marengo, Ill.

Ventilation of Sections

The matter of temperature is one of importance for bees. In winter they must be kept warm, yet sometimes harm comes from their being too warm. In spring and early summer there is little or no danger of having them too warm, for brood-rearing will be limited if the temperature surrounding the brood-combs be too low. On the whole, not so very much judgment is needed on the part of the bee-keeper in winter and spring. If he tries to keep his bees warm they will generally come out all right.

In summer, however, it is something of a problem to know just what to do in all cases about keeping bees warm. Wax working requires a high temperature; yet if one should keep a hive well closed and protected, so that little heat can escape during the honey harvest, one is doing just so much toward bringing on the swarming fever. Often, at least in some places, there are hot days and cool nights. In the night everything should be kept as warm as possible, but in daytime lots of ventilation should be given. But it would be too much of a chore to change the ventilation each morning and evening, and so a middle ground must be chosen, and just what that middle ground should be is a problem. The problem is easier when running for extracted honey. A colony producing extracted honey can have more ventilation given than one with a stack of sections upon it, since there is less comb building to be done in the former.

Producing section honey in T-supers, we have never done anything to keep supers or hives warm during the harvest, but we have done something to help the bees to keep cool. For years we have had a 2-inch space under bottom-bars, with a bottom-rack to keep the bees from building down. Some

years ago we practiced allowing a ventilation space at the top of the hive, at the back end, by having the super shoved forward a fourth of an inch or so. Undoubtedly that had some effect in helping to keep down swarming, but the back row of sections was slower about being finished up than the rest of the super. To be sure we could, and did, reverse the super when partly filled, but that still left the central rows finished before the ends. So we gave up ventilating in that way, and allowed no ventilation except at the entrance.

After a while, however, Dr. Miller decided that the advantage gained by the ventilation in the way of preventing swarming overbalanced the disadvantage to the supers, and we returned to the ventilating. Within the past two or three years we were surprised to find that the back row of sections, in some cases, instead of being behind the others in being finished up, were finished before the front row. This year the same thing happened again, and then one day in June a sight met our eyes that we had not supposed possible. All the outer sections in a super were nicely finished up, back, front, and sides, while several sections in the center of the super were only partly sealed. We could not account for the freak. Were the bees of that colony loony? Then we found the same thing on another hive, and another, and another, until it seemed to be about as much the rule as the exception.

Can any one tell us why this sort of thing should take place? Was it because of the exceptionally hot weather? Anyway, it raises the question whether we ought not to give a good deal of ventilation to supers of sections, at least in very hot weather?

An Optimistic View

An article by a woman writer in "Opportunity," is entitled "Half-Acre

Opportunities for Women." After discussing the raising of poultry, pheasants, frogs, and squabs, the writer goes on to say:

"Bee raising is another profitable agricultural field that is open to the country woman. Honey sells for 25 cents per pound in most places, and a single swarm of bees will produce 70 pounds of honey in a season without feed and without attention. I have had considerable experience in this line myself, and know that big profits can be derived from it if it is given reasonable attention."

That certainly looks like a somewhat hopeful opportunity to the city woman penned up in a stuffy office, with a longing for the fresh air of the country. From the data given she could easily figure out something about the "big profits" mentioned if she only knew something about the number of colonies to be considered.

To the question, "How many 'swarms' of bees can be kept on half an acre?" she is likely to get the answer, "Oh, about a hundred." Then she figures. Seventy pounds of honey at 25 cents a pound amounts to \$17.50. With 100 colonies one would have \$1750. That, too, "without feed and without attention." All that is to be done is to get the 100 colonies of bees. Of course, no knowledge of bee-keeping is needed, for no attention is needed. No doubt with "reasonable attention" an annual income of \$2000 or \$2500 can be easily reached. There is no room for any doubt, for the writer of the article has "had considerable experience in this line," and so she knows.

Yet any woman with a little experience with bees knows that the prospect is painted in altogether too bright colors. Yet there was probably not the slightest intention to mislead. There is nothing remarkable about getting 70 pounds of honey from a colony; there are plenty of places where the consumer pays 25 cents a pound for honey, and plenty of locations which will support 100 colonies of bees. The trouble, as with many other half truths, is that the remaining half of the truth is not told. She should be told that the poor years and years of entire failure are all too many, that "without attention" her investment will take to itself wings in the shape of swarms, that winter losses will deplete her numbers, and that if she averages half the amount named, even with attention, she may consider herself quite a success.

Yet, even so, she may be greatly the gainer to join the ranks of bee-keepers.

Honey vs. Poisonous Molasses

T. B. Terry, whose book, "How to Keep Well and Live Long," has had a wide circulation, and whose writings are eagerly read by thousands of readers of the Practical Farmer, in a late number of that periodical has the following with its striking heading:

BEEN DRINKING POISON.

"When I read in 'Starving America' that all Louisiana molasses contains sulphurous acid, I thought it must be a mistake. We had a gallon can of the

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best made, bought of a large firm that guarantees its food products pure. It had been used in roasted wheat to make our cereal 'coffee.' I got the can and looked at the label carefully, and, behold! there it was, in small letters that I had not noticed: 'Contains sulphur dioxide.' This is the same as sulphurous acid. I thought we were not eating any of the cursed poisons. We gave up evaporated peaches because they are bleached with sulphur; so are apricots, white raisins, etc. We will buy no more molasses, and no more candy, as pure candy cannot be made from poisoned molasses and sugar.

"What can we get in place of those that are sweet and pure? Well, we have 2 gallons of pure white honey, strictly guaranteed. We don't believe there is any sulphurous acid in that. We have maple syrup made by neighbors which is undoubtedly pure, and we buy the dark colored, unbleached raisins instead of the white bleached ones which are poisoned, and so on. Perhaps you think the little poison we would get from eating molasses, or candy, or dried peaches, etc., would not do any noticeable harm. It would not kill us directly it is not likely. But every little drop of poison must pull down on one some. When there are poisons in almost everything we eat, we cannot be at our best physically or mentally, cannot live out our full number of days."

If so keen an observer as Mr. Terry has been deceived into eating poisoned molasses, it is no wonder that thousands of others are deceived in like manner. His endorsement of honey as a wholesome substitute for the unwholesome molasses will do no small good, for T. B. Terry has been so slow to recognize honey at its true value as a conserver of health and strength. Let us hope that he will get into the light a little more fully, and inform his readers that it will be greatly for the health of the nation, and especially for the children of the nation, if, instead of the harmful quantities of sugar consumed, pure honey shall be used, since honey

is directly assimilated, while excessive quantities of sugar make ruinous de-

mands on the digestive organs in preparing it for assimilation.



No. 4.—THE SETTLED SWARM.

BEE-KEEPING IN DIXIE~

Conducted by J. J. WILDER, Cordele, Ga.

Some Questions Answered

"MR. WILDER:—Do you think the Caucasian bees better than the Italians, and in what ways?"

ANS.—They are better for the South with the exception that they propolize more. That they are a superior race of bees has been tested by a number of our most progressive bee-keepers. If you do not think it would be safe to adopt this breed entirely, you might purchase a few queens and make a test for yourself, as we have done.

"How much and what kind of foundation do you use in supers?"

ANS.—Full sheets of thin surplus foundation.

"When do you put supers on?"

ANS.—I put one on for a starter just before each honey-flow, then add on more as the bees get ready for them, always inserting the empty super under the others.

"What kind of supers do you use?"

ANS.—I prefer shallow extracting supers for bulk comb honey, and their equivalent for honey in one-pound sections. If I were operating solely for extracted honey, I would use only full depth supers, same as for brood-chambers.

"How should I prepare my bees for winter?"

ANS.—No special preparation except to see that each colony has a good queen and a frame of honey on either side of the brood-nest.

"How can I keep combs from becoming infested with moth?"

ANS.—Place them in the care of the strongest colonies.

"How can I rear a few prolific queens?"

ANS.—Divide your best colony into two equal parts, and put one-half with the queen on a new stand. In nine days, in the other, you will have some nice ripe queen-cells, which you can carefully remove and place in cell-protectors. Look up and kill inferior queens and give their bees these cells.

Introducing a Valuable Queen

"MR. WILDER:—I have had an unfortunate experience in introducing a fine queen I recently received. I divided a very strong colony in two equal parts, and took the old queen, about half of the old bees, and most of the brood to a new stand. I tried to introduce the queen to the half left on the old stand, but soon noticed that these bees seemed to be demoralized, crawling out of the entrance all over

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the hive and flying out about the hive. This they kept up for three days, and then seemed to settle down. I then opened the hive, removed the cage and looked over the combs, but failed to find the queen. Looking on the ground in front of the hive I found her dead. Where was my mistake?"

Enid, Okla. E. M. SPAID.

ANS.—It was all right to divide the colony as you did, taking most of the brood to the new location, but you should have left the old queen with the bees at the old stand, and introduced the new queen to the other part. Almost all of the old bees would have left the new place and gone back to the old stand, and you would have had mostly young bees with the new queen. The young bees would have accepted the queen much more readily. This is a good way to introduce queens and make increase at the same time, if it is not done too late in the season. I followed this method for a long time with great success.

Arkansas as a Bee-Country

"MR. WILDER:—I am a young man and do not have the best of health. I love bee-keeping, and wish to make it my life occupation. Which would you advise me to produce, extracted or bulk comb honey? In what part of Arkansas would you advise me to locate? I lived a long while at Hot Springs, and had some experience with bees there." L. H. HOOVER.

Jacksonville, Ill.

ANS.—If you produce bulk comb honey you will or should produce a certain amount of extracted.

The section of Arkansas which struck me as being most favorable for bee-keeping was Arkansas county, along Big and Little La Grue creeks, about where they run together. There are large swamps with plenty of honey-plants. The swamps along the west side extend out within one or two miles of Ball prairie, from which flow small streams one or two miles apart. Where the small streams enter the woodland, are beautiful points for homes. The prairie behind is for the most part of the year covered with flowers, many of which are nectar-bearing.

In this section bees have made the best record both in amount of increase and in surplus honey.

Tupelo-Gum Honey

It is not generally known that our southern tupelo-gum honey has a high commercial value and a ready demand. In some sections of the South the production of this honey is the main industry, and yet hardly a drop is harvested compared to what goes ungathered. The bulk of this honey is produced in the extracted form, put up in 30 to 33 gallon barrels and shipped to the honey dealers of the North. They have agents in the field to buy it as soon as it is produced. They prefer this honey because it will not granulate, and are willing to pay a fancy price for it. It has an exquisite flavor,

a thick body, and is very light in color with just a little lemon hue, which makes it appear very beautiful in glass containers. Perhaps no honey has a higher commercial value for these reasons.

There are three species of this gum, and very often two are found growing together. The white specie produces the honey I have referred to above, and grows mostly on low swampy land, along the interior water courses. The black tupelo grows in the same sections, but on the low muck land. Its

honey has nearly the same flavor as the white, and has a heavy body, but is much darker in color.

The other species I call the scrub tupelo. It grows along our smaller creeks and around ponds. Its honey has about the same body and flavor as the white, but has a green hue. Our Dixie bee-keepers who are spreading out their bee-business, should not lose sight of this honey-plant. They should place some bees in reach of it, even if they have to go 100 or 150 miles to do so.



NO. 5.—THE QUEEN IS LET OUT TO RUN IN WITH A SWARM.



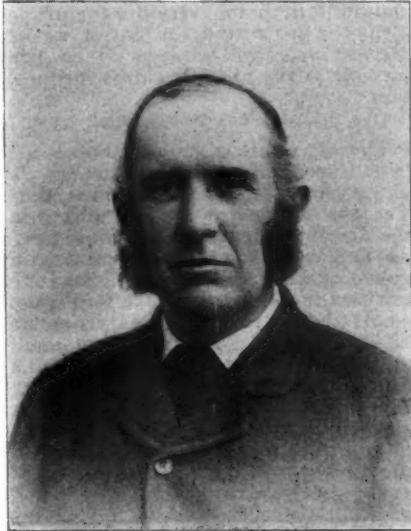
NO. 6.—THE PROOF OF THE PUDDING

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SKETCHES OF BEEDOMITES

Death of Wm. McEvoy

It is with the deepest regret that we announce the death of one of the pioneers in the treatment of diseases of bees, Mr. Wm. McEvoy, of Woodburn, Ontario, Canada, which occurred at his home June 29, 1913. Mr. McEvoy was born at Zimmerman's Mills, Ont., March 26, 1844. While a young man he worked on the farm, and at the age of 18 secured his first bees. For two or three years after this he was fire-



THE LATE WM. MCEVOY

man in a grist mill, but soon gave this up to spend his entire time in bee-keep-

ing, which occupation he pursued until his death.

As a foul-brood inspector and authority on foul brood Mr. McEvoy is especially well known. His method of treatment of American foul brood is known by all bee-keepers who have had to deal with this dreaded disease. It stands as an unfailing treatment for the disease if practiced exactly to the letter, as laid down by its originator.

Mr. McEvoy, besides being an experienced and practical man in bee-keeping, and in the controlling of bee-diseases, was also an able writer. As early as 1890, we find him writing on American foul brood in the American Bee Journal. By that time, too, he had formed an opinion as to the causes of foul brood, and also the treatment by which it could be eradicated. There was no middle course with him in the treatment of this disease. His plan was to be thorough. Briefly stated, the plan consists in shaking the bees from their old combs on strips of foundation. These strips are left in the hive for four days, by the end of which time all the honey carried from the diseased combs has been consumed. The bees are then put on full sheets of foundation and given a fresh start.

For many years Mr. McEvoy was foul brood inspector, and to him is due a great deal of the early advancement in bee-keeping in Ontario.

Always a large bee-keeper, he was firm in his convictions that a living could be made from this pursuit alone. Almost his last words to his son Ewart were, "Stay with the bees."

We have lost a great man and a great bee-keeper, but his name is written down on our pages where it will remain indelible. All sympathy to the bereaved family in their loss.

loads, including supplies, etc., were all moved safely without a hitch. I intended to send a picture of the large apiary taken the day after the bees were put on the stands. Although I have the negative developed, I have not had time to do any printing, so I will send the picture for next issue if all goes well.

The Crop—Different Races of Bees

Although we have secured a nice crop, we have had practically no swarming with the exception of one yard, where the bees got ahead of us and went crazy for a few days. Many have reported heavy swarming with only one yard to look after, and I have wondered how they would like to tackle a 5-yard proposition, with no help except in extracting time. Abundance of room *in time* is one of the main factors in preventing swarming, but sometimes nothing will stop an outbreak. Fortunately for us the bees were easily controlled this year, for with all the other work, I hardly know what might have happened if all the yards had acted like that one did. I have mostly Carniolan blood in my yards, but as I use big hives, the swarming is not usually a serious factor.

I do not like to tier up too high, as I believe more honey will be secured by extracting often and using but two full depth supers to a hive. This year I had to do the best I could, and at present I have many colonies with 4 full depth Quinby supers—10 frames in a super, and all full of sealed honey. Some work ahead of us yet before we can fold our arms and "go fishing."

While, as I have said, Carniolan blood predominates in our apiaries, yet we have some Italian as well, both golden and leather colored. It is interesting to note the traits of the different races in the same yards. This season I have been taking note of some of these characteristics.

In the great rush of work I simply extracted from the top stories to give immediate relief, and these empty bodies were placed back on top again. Not good practice I know, and I never did it before, but there is a time when you are apt to get so tired as to say, "What does it matter anyway," and do things contrary to what you know to be best. In fact, I had no time to place empty supers on the bottom, and with the rush of nectar coming in, the bees went any place they had a chance to. I believe they would have stored it in a pail if one had been placed on top.

We are now having very cool weather, and these top stories recently emptied are interesting to look at. With the dark bees the super is overflowing with bees, but with the Italians hardly a bee is seen above, even if the colonies are clustering outside the entrance. Carniolans, like the black bees, are far more free to store honey a long ways from the brood-nest than are the Italians; and while this fact was not so apparent in hot weather, it is plainly evident in cooler weather.

This is a well known fact, but I never noticed it so prominently before. During the heavy flow the black bees

CANADIAN BEEDOM~

Conducted by J. L. BYER, Mt. Joy, Ontario.

Crop Conditions

At this date, July 10, the clover honey harvest is just closing in Ontario. Very few reports are in, but those I have received seem to indicate a short crop for the eastern part of Ontario, with a full yield in central counties along the lakes. In our own yards the yield is from light to very good. At the north yard, 90 miles from home, the late, hard frosts damaged the clover badly, and the yield is light. No prospects from basswood, as up there the frost hurt the buds, and then a plague of caterpillars stripped all foliage from the trees.

At the yards near my home the yield has been excellent; in fact, the best I ever had, and the quality is of the very best. What few basswoods we have here look promising, but we rarely get much from that source. Prospects were never better for buckwheat, so all things considered, it looks like the year '13 will be a good one for most Ontario bee-keepers.

Moving Bees

Mention was also made of my intention to move a large apiary over 250 miles. The lot comprising two car-

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that we still have mixed in some of our yards, stored equally as well as the Carniolans and Italians, but as the flow slackened, they were "not in it." In other words, they have not the "stick-toitiveness" that the other two races have. As to the general average of the yards, the Carniolans stored far the most honey—not that they worked better than the Italians, but the flow came early, and the Carniolans were boiling over with bees, simply waiting for the nectar to come, while many Italians were still a bit weak in field force.

As to cellar and outdoor wintering, this year by all odds favored the outdoor system. The large yard moved from the east was wintered in caves, and while the bees appeared to be in perfect condition, they did not measure up with the 100 colonies wintered outside. The outdoor bees doubled on the others; for awhile there appeared to be about the same number of bees in all the hives, but on May 24 to June 10 it was a different story. Many of the bees in the cellar-wintered colonies were old on May 24, when comparison was made, and during the long spell of cold weather after that period until clover bloom, these old bees dropped off a good deal faster than young ones could take their places. Another year might tell a different story, but this year it would have meant a few thousand pounds more honey had all been wintered outdoors. All our bees in the York county apiaries were wintered outside, and because they were boiling over when the clover flow came, we had a nice yield from that yard.

Mention was made about one yard swarming badly for a few days, and while this was caused by the bees get-

ting crowded for room, after all it did not turn out so badly. I scented trouble at the yard the day before the outbreak, and as I had to be extracting at other yards, I hired a man fairly familiar with bees to cage the queens and let the swarms return. Yesterday, about 10 days after the fever came on, I managed to get a day off, and went to this yard to straighten up the tangle. Imagine my surprise and delight when, after lifting off the supers, I found in most cases the cells were cut down and a young queen in the hive, even if the old queens had been caged on top of the supers all the time. In some cases the swarming had been caused by supersEDURE, but in others young queens of last year's rearing were in the cages. Hard to explain why it was done; but my theory is that during an exceptionally cool spell of weather, which lasted for 48 hours just previous to my visit to the yard, the bees had allowed the first issuing young queen to destroy all the other cells.

As already stated, only the one yard gave us any trouble, and while I expected to lose swarms, I am surprised and gratified the loss was so small. I have just returned from one apiary not visited for a week, and although the flow has been good there, not a swarm has issued; that yard is mostly composed of Carniolans that are accused of being such bad swarmer.

I do not feel like reading or writing much just at present. If you wonder why, take charge of five apiaries during a good honey-flow. After "following the game" for four weeks without a let up, you will understand all about it. *Good night.*

should be appreciated by the careful bee-keeper.

Holding a certificate from the State inspector ourselves, which shows that our bees have been inspected and found in good healthy condition, we are well prepared to come forward and require the inspection of all other bees near us. It should be our intention to enforce such inspection upon all other bee-keepers in our neighborhood after we have secured our own certificate.

"IN UNION THERE IS STRENGTH."

To make this more effective, a number of bee-keepers should unite. This will strengthen the plan materially, as united effort will carry greater weight than a single-handed attempt. But by all means let it not be understood that any one should not take the matter up just as promptly single-handed, and especially where a progressive bee-keeper finds himself in a somewhat isolated locality. The time has passed when we should hesitate to carry out the proper steps for protection for fear of offending our neighbor bee-keeper. To protect ourselves is a business proposition.

THE DISEASE MAY ALREADY BE NEAR.

The question of the distance foul brood may be from one's locality will play a part in this method of procedure. Yet it is not necessary to wait until the disease appears. That would never do, and that is exactly what we want to guard against. Take for instance in my own locality, I find that foul brood exists about a dozen miles from one of my apiaries. The question comes up then, whether there may not be scattering foul brood cases nearer. Thirty miles should be considered near enough, in my estimation, to warrant taking steps to guard promptly against the disease. Who can know whether some infection from that foul brood apiary, even at an apparently safe distance, may not be carried near enough to my own apiaries to be a source of infection. Especially important is this when the diseased apiary is owned by a careless bee-keeper.

It behooves us to take up this matter at the very earliest stage. It is hoped, therefore, that the bee-keepers of Texas, and other States and countries as well, will make one great fight against those menaces to the bee-keeping industry.

SOUTHERN BEEDOM~

Conducted by LOUIS H. SCHOLL, New Braunfels, Tex.

To Guard Against Foul Brood

It is of the utmost importance to be constantly on the watch for bee-diseases, especially foul brood, and all proper precautions should be taken beforehand. Foremost is educating one's self properly on this subject, as it is highly important to know everything possible about diseases of bees, so that the apiarist may be prepared. Taking the proper steps at the right time, before the "enemy" appears, is a strong fortification against any depredations. "An ounce of prevention is worth a pound of cure."

A NEW PLAN FOR PROTECTION.

At a meeting of several enthusiastic and progressive bee-keepers recently, the discussions centered about a plan of protection, which, if carried out properly, may be of untold benefit. I am a strict advocate of doing things at just the right time.

Texas has now in operation, since July 1, a stronger and more powerful foul brood law than the old one. With

it I believe the diseases of bees can be kept in check, if not eradicated from the State altogether. It is up to the bee-keepers of Texas. Organized effort on their part, and co-operation with the State foul brood inspector at all times, will mean a greater work along this line than can ever be expected in any other way. It is this that I hope to see carried out promptly and properly. We have a foul brood law that I believe is powerful enough to back any cases that may necessarily require such "backing up."

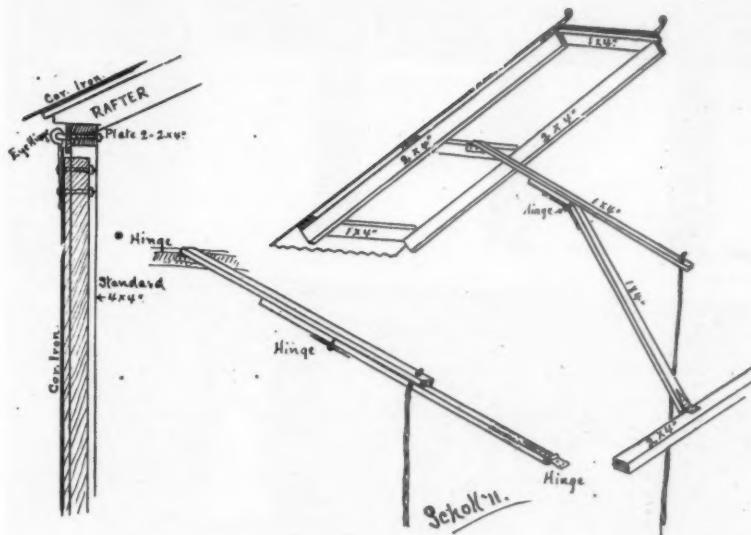
ARMED WITH A CERTIFICATE.

The plan discussed above calls for the inspection of our own apiaries, and obtaining a certificate of freedom from contagious bee-diseases among our own bees, first of all. This can be obtained easily enough in such localities that are near or in proximity to those infected. Such an inspection would be worth a great deal to determine definitely whether one's own apiaries are actually free from disease. The satisfaction of this knowledge

Scholl's Honey-House Shutters

A request from an enquirer, desiring information about my shutters with folding "arms" or supports, as used on our honey houses, prompts me to give a drawing that is self-explanatory. Our shutters are 8 feet long and 6 feet wide, and made of 2x4 and 1x4 lumber and corrugated galvanized iron. On account of their weight it is necessary to devise some means for opening and holding them from the building. This allows proper ventilation, and at the same time serves as additional roof for shade. A cooler building is the result.

Our honey houses and work shops are provided with these large shutters on the south side. By this means it is possible to open the greater part of the



SCHOLL'S HONEY-HOUSE SHUTTER.

wall with great ease. Just a little push of the hand throws the shutter forward and outward, and a pull of the rope raises it to the proper position. To release the "arm" and close the shutter, a slight push on the underside of the folding arm suffices. It is important to hold to the rope firmly so as to prevent the shutter from slamming, and possibly striking the person operating it.

A slight change from attaching the

shutter support, as shown in the drawing, is necessary to make it work more perfectly. Instead of hinging the support to the crosspiece across the middle of the shutter, an independent cross-piece should be placed one-fourth the distance from the lower end. On an 8-foot shutter this crosspiece would be 2 feet from the lower end. The two pieces of the support are each 4 feet long, the lower one hinged to the middle of the upper one with the rope.

cluster below the frames, then replaced on its stand, and the two frames returned. The queen will be found trying to pass through the excluder.

Dr. Cheney's plan is to remove the hive from its stand and place an empty hive in its stead. On this place a queen-excluder with a 4-inch board tacked on one side of the lower side, so there is a space of the lower hive left uncovered. The hive to be manipulated is then placed on the queen-excluder, gently smoked, and the combs transferred from the upper to the lower hive through the uncovered part of the lower hive, search being made on each comb for the queen.

Mr. Root said all who enjoyed this kind of sport were welcome to it, but his way was to keep nothing but quiet Italian stock, and he never had the least trouble in locating the queen by "just looking."

The last discussion was by President Root, on his winter-case. This is a double-walled outer case, with 2 inches of packing between the walls. It telescopes over the regular hive-body, the hand-hole cleats being left off to insure a closer fit. The regular hive cover is also left off, and $\frac{1}{2}$ -inch super cover is used over the body. With this there is used a double packed bottom and a packed telescope cover.

Mr. Root claims this case is worth \$2 per hive each year in the saving of winter stores and extra honey gathered early before the cases are removed. So far as location is concerned, Mr. Root's yards would not be considered by apiarists to be in need of extra winter protection, as all are in fairly well sheltered locations, and not very remote from Raritan Bay and the Atlantic Ocean, where temperatures are not, ordinarily, extreme.—E. G. CARR.

CONVENTION PROCEEDINGS

New Jersey Bee-Keepers' Meeting

One of the best attended summer meetings of the New Jersey Bee-Keepers' Association was held at the apiary of Geo. Grover, near Trenton, on June 25. People were in attendance from New Jersey, Pennsylvania, New York and Delaware—64 in all being present. As an evidence of the interest, one couple rode their bicycles 13 miles to the railroad station, in order to catch an early train.

The improved rubber cloth was the subject of the first talk, by Dr. Cheney, of Hoboken. He also showed an ingenious stand to be used when manipulating hives.

The tube bee-escape and its uses were ably discussed by W. W. Case, of Frenchtown. While the primary object in devising this was for the control of foul brood, it is also ideal for transferring

After lunch, "Short cuts in finding

queens," was discussed by I. J. Stringham, of New York; Dr. Cheney, of Hoboken; and C. H. Root, of Red Bank. Mr. Stringham's plan is primarily intended to be used on black or hybrid stock, and at a time when robbers are troublesome. He puts near the hive to be manipulated, a spare bottom-board, on that a queen-excluder, and two empty hive-bodies on this. The hive in which the queen is to be found is gently smoked at the entrance, lifted from its bottom-board and placed on top of the two empty bodies. The cover is now removed, the bees freely smoked, and two combs removed from the sides of the hive. If the queen is not on them, they are covered from robbers. The remainder of the frames in the hive are spread, and the bees drawn down by free use of smoke.

This will cause most of the bees and the queen to cluster below the bottom-bars. The hive is raised about an inch and set down sharply, dislodging the

The annual convention of bee-keepers, held by the Extension Service of the Massachusetts Agricultural College, June 11 and 12, at Amherst, was characterized by a large attendance and a particularly interesting program.

The equipment for apiculture at the State College, which is as good as any in the country, has been added to during the past year, the manufacturers sending exhibits exceeding last year's display.

The morning of the first day's session was given over to general displays and demonstrations by inventors and manufacturers, and three addresses. Mr. E. C. Britton, of Canton, Mass., discussed "Practical Bee-Keeping," emphasizing especially the need of a large number of working bees for honey production; Mr. Morley Pettit, Provincial Apiarist for Ontario, Canada, took up "Extracted Honey Production;" and Prof. F. A. Waugh, a horticulturist of National reputation, spoke on "Pollination of Fruits."

Wednesday afternoon was given over to bee-diseases. Diseases in the apiary and their transmission, prevention and

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THE MASSACHUSETTS CONVENTION GROUP.



PARTIAL VIEW OF EXHIBITS AT AMHERST.

American Bee Journal

eradication are being carefully dealt with by the department at Amherst, and the discussions were comprehensive. Dr. B. N. Gates, State Apiary Inspector, gave a general survey of brood diseases. Mr. Chas. M. Musgrave discussed the "Bee-Escape Treatment for Foul Brood," and the question was open for general discussion by the attending bee-keepers.

Bees and queens shipped by dealers from all parts of the country in combless packages were on exhibition, and were manipulated. Dr. Gates believes that one of the best methods for the prevention of transmission of brood diseases in shipping bees, is in using the combless packages, and he is at present instigating a campaign for their universal use as far as possible. The Massachusetts deputy inspectors gave a demonstration of treatment for diseases.

Of special interest was an illustrated lecture Wednesday evening by Mr. Pettit, concerning bee-keeping in his Province. Conditions in Ontario are much different from those in New England, and the large scale production of Ontario bee-keepers and their methods of obtaining extracted honey were of much interest to those in attendance.

The second day opened with a discussion of bee foods, principally canaries, by Mr. O. F. Fuller, of Blackstone. Geo. T. Whittle, of the Hartford School of Horticulture, demonstrated some original methods of winter increase, and a scheme of working 2 colonies of bees on one super.

At the model apiary, Mr. E. R. Root, of Medina, Ohio, demonstrated and explained appliances for the uncapping and extracting of honey on a commercial scale. A 6-frame electrically driven reversible extractor, a steam capping melter and a hot uncapping knife were in operation, together with a honey-pump, which discharged the extracted honey into the bottling device.

Mr. Root also spoke extensively on the "Management of Out-Apiaries," and was followed by A. W. Yates, one of the Connecticut Deputy Inspectors, speaking on the same subject for New England conditions. A discussion by Mr. John Shaughnessy, a Deputy Inspector of Lee, and a lecture by Dr. W. P. Brooks, on "Increasing the Clovers," closed the program.

The regular display of bee-appliances of all kinds by the college was much larger than in former years, there being several additions of historical interests as well as many new inventions. A fine display of wax in all sizes of preparation and refinement, together with a comparative exhibit of wax on the market, attracted much attention. The college has recently installed a model steam plant for wax rendering and refining, and the exhibit of about 100 pounds of refined produce was prepared under Dr. Gates directions. The crude way in which much wax is commercially handled, was well brought out by the superior product obtained by careful methods.

A collection of honey packages, in-

cluding tin section boxes from Colorado, new shipping crates and other packages were shown. Also cement hive stands of various styles, a new observatory hive, and a new patented bottom-board claimed attention. The apiary of 50 colonies is surrounded, this year, by a bee-garden of all the important nectar-yielding plants of the

country around Amherst, and this feature served an educational value.

The keynotes of the convention were the necessity of applying strict business methods in marketing bee-products, and the value of keeping up with the advance in disease treatment. Conditions are yet favorable for a good honey crop in Massachusetts.

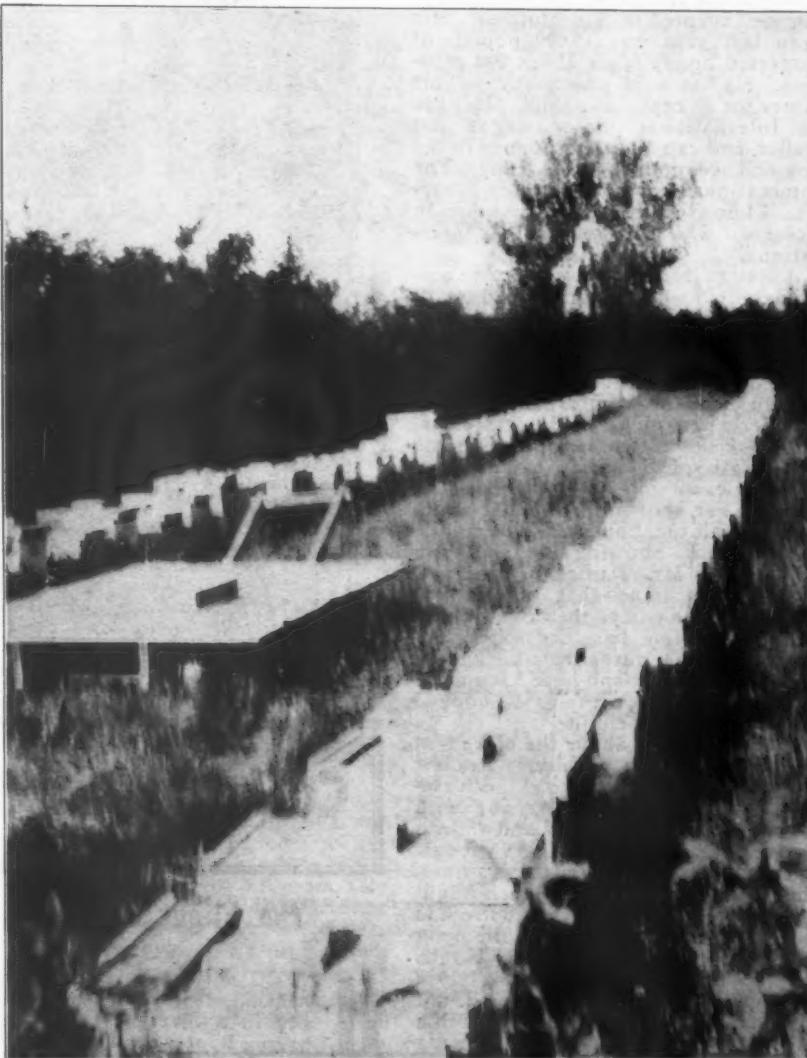
FAR WESTERN BEE-KEEPING

Conducted by WESLEY FOSTER, Boulder, Colo.

An Ideal Farm and Apiary in Colorado

Mr. Danielson lives on a beautiful irrigated stock farm 3½ miles northwest of Brush, Colo. Brush is in the

South Platte valley, about 100 miles northeast of Denver. The land here is adapted to alfalfa, sugar beets, and grain. The lay of the land could not be finer for irrigation purposes. The



APIARY OF DANIEL DANIELSON, AT BRUSH, COLO., SURROUNDED BY HONEY-LOCUST HEDGE

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slope is just right. Land values are from \$100 an acre up to \$175. One farmer raised 37 tons of beets to the acre, last year. The wide sandy bed of the Platte is nearly dry most of the year, and sweet clover has taken most of the bottom land. All the bee-men locate within range of this sweet clover. Alfalfa, of course, is an important source of nectar, but the sweet clover is necessary to help out. Not many farmers have bees, as they were put out of business by the poor seasons several years ago.

Mr. Danielson said they always got some honey when the grasshoppers did not take everything. He operates about 350 colonies, and his grown sons operate the farm. In the feed lot are 25 head of fine fat steers ready for the market. They are worth about \$100 each. I wonder that a man can afford to keep bees who can raise such stock as that.

Mr. Danielson is getting along in years, and is troubled somewhat with rheumatism, so that he finds bee-keeping well adapted to his abilities. His crop last year was 15,000 pounds of extracted honey from about 200 colonies. He has sold practically all his honey for 10 cents a pound. He has an International motor wagon and trailer, and can load 1600 pounds in the box and 1000 pounds in the trailer. The International seems to be quite a favorite. I know of five other bee-men in Colorado who have purchased Internationals.

A visit to Mr. Danielson's home apiary is worth while. Surrounded on all sides by a honey-locust hedge, it is wonderfully well protected from the winter storms. The honey house is close by, and is tight and warm so winter work can be comfortably done by an elderly person as is Mr. Danielson.

A track set on two by fours runs the full length of the apiary; one row of hives on each side of the track. The flat push car, shown in the illustration, will hold all the honey the automobile can haul out. Showing the precision with which Mr. Danielson works, it should be mentioned that the track is level from one end to the other.

Mr. Danielson has an extracting house about 200 yards from his apiary, close to the house, and here I found an 8-frame extractor ready to be hooked up to the gasoline engine.

The novel thing about the place that appealed to me was the honey strainer (shown in the illustration). Cheesecloth is rolled up on rollers, and with the crank it can be turned, and a clean surface had for straining without touching the fingers to the strainer. This strainer is taken off each night and washed. A screen wire bottom is used for the cheese-cloth to lie upon when the honey is straining. Hooks are placed along each side to fasten the edges so that the honey will not run over. The honey runs through a pipe that passes through the capping melter before flowing into the strainer,

so that the honey is heated before it goes into the strainer.

Foul brood has not made its advances in Morgan county very much so far, but care will have to be exercised to keep it out, as some has been

brought into the lower part of the county. In case it should gain a foothold, it is possible that Mr. Danielson will find it necessary to give up extracted honey for comb-honey production.



CHEESECLOTH ROLLER STRAINER OF DANIEL DANIELSON.

CONTRIBUTED ARTICLES~

The Flight of Bees

BY G. W. PERRY.

HAVING noticed of late, in the Bee Journal, this subject, "Do Bees Fly in a Straight Line?" and having hunted them a little some years ago, I feel constrained to

"butt in." My first observation was accidental. I was not caring whether they flew straight or not, but their performance was so striking that I was forced to take notice. I picked up a line of bees that flew southwest. I followed them, bee-hunter style, about one-half mile, when all at once they

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APIARY HOUSE OF G. W. PERRY.

flew northwest. I followed them in the same manner about one third of a mile into the attic of a farm house, on the bank of the Farmington River. They were flying around the end of a mountain rather than over it, and out of a straight line at least one-third of a mile.

Another time I started some bees on the east side of a high, steep rocky bluff. They flew north about 200 rods, then turned to the left about 20 degrees to where the bluff was not half so high. Here they made another turn to the left down through an open pasture into some hives in a man's backyard.

Bees, in crossing from one mountain to another, will go down into the valley to cross, I believe, on account of the wind they encounter so high up. My observations lead me to think that bees do not like to get too far from earth. Bees foraging at one end of a valley with their home at the other, if the valley is narrow with mountains on either side, will keep in line with the valley, however crooked. Do bees fly in a straight line? In a level, open country, on a still day, they fly practically straight, but we need to give the practically a good wide margin.

I will say in conclusion to those who believe bees fly in a straight line only, that the test of the pudding is in the eating, and if they will equip themselves with a bee hunter's box, a field glass, a pocket compass, and "hike" for a country that is all chopped up with mountains, hills, valleys, rivers, brooks and timber, and hunt bees, they will get a lot of pleasure, some surprises, some knowledge, no boodle, and they may change their mind. For the love of our little friends, should you find their home in some tree, before you rob them, unless you can give them another home, step to one side and talk to yourself. If you are a lover of Nature, and of the music of the

millions of voices that sing the praise of that Deity, you will have an outing that is hard to beat, and have a better knowledge of the flight of bees than you will get in a long time by going into a level open lot and sitting on the fence to hear and see a few bees fly past.

Litchfield, Conn.

Some Things About Cellar-Wintering

BY DR. C. C. MILLER.

FROM a source not lightly to be refused comes a request that I should tell all I know about cellar-wintering. The task might not be a very heavy one if I should confine myself strictly to what I really know. Josh Billings says: "What's the use of knowin' so much, when so much that we know ain't so?" And too often some of the things we think we know we afterward find "ain't so." There are things I thought I knew a few years ago that I don't feel so sure about now.

CHOOSING BETWEEN OUTDOOR WINTERING AND CELLARING.

One of the first things to decide about wintering is whether it is better to winter in cellar or outdoors. One might think a degree of latitude should be found, north of which all bees should be cellared, and south of which all should be wintered outdoors. But it doesn't work out very clearly in that way. Isothermal lines are not entirely coincident with parallels of latitude. Indeed it is not certain that isothermal lines, or lines running through points of equal temperature, can be at all depended upon.

I am located in northern Illinois, in latitude 42 degrees, and I am pretty sure that the cellar is better for my

bees than outdoors. But it does not necessarily follow that a man a hundred miles directly north of me should winter his bees in a cellar. I am located where winter winds are fierce, and where they keep steadily on their job, hours and hours at a time. And that "hours and hours" is a matter of more consequence than the fierceness of the wind. The man 100 miles north of me may have a much lower temperature, but not afflicted with such winds, and his bees may be all right outdoors.

Up to 40 degrees of latitude it is safe to say that outdoor wintering is the better way, but when we get north of that a little ways it begins to be a question. The beginner may do well to rely on the experience of older bee-keepers. For myself, if the thing were at all in the balance, I would lean strongly toward outdoor wintering. If there were no other reason, a strong one is that one with an ordinary cellar cannot go from home for a great many days while his bees are in a cellar. I may not actually enter the bee-room for days, or even weeks, at a time, but I must be on hand to open or shut doors when there are material changes in the weather. So I envy the man who can leave his bees outside.

TIME TO CELLAR BEES.

Just when is the right time to put bees in cellar is largely a matter of guessing. If one could know all about the weather a few weeks in advance, it would be an easy thing to lay down a reliable rule. It can be given in a few words: *Cellar your bees the day after they take their last flight before winter.* The guessing comes when you try to decide whether the bees will have another day when they can fly. I have known it to happen that a good flight-day came rather early in November, and then no chance for another flight until the following spring. Suppose bees have a flight Nov. 20, and you cellar them the next day. Then Nov. 30 comes another flight-day. You have subjected your bees to 10 days' unnecessary confinement. That's bad. Then suppose the next year the bees fly again Nov. 20. Remembering your experience of the previous year, you wait for them to fly 10 days later.

But when Nov. 30 comes, the thermometer is fooling around the neighborhood of zero, and you take your bees in without waiting longer. The confinement to the hive begins just the same in the 2 years, only in the first case the first 10 days were spent in the cellar, and in the second case outdoors. In that 10 days outdoors the bees will load their intestines very much more than they would in the cellar. In other words, leaving the bees out 10 days too long will do more harm than taking them in 10 days too soon.

The chances are, however, that if you wait until Nov. 30, and no flight comes then, you will keep waiting and waiting for a warm day, and if no such day comes you will finally take in the bees after they have been out many days too

American Bee Journal

long. In my locality there is not much danger of being caught before the middle of December; but I never care to take chances after Nov. 15, and the first flight they get after that, in they go. If a warm day comes soon after they are in cellar, it doesn't worry me. I had rather be caught that way than the other way.

TEMPERATURE OF CELLAR.

The first difficulty met in attempting to have a bee-cellar of right temperature lies in the thermometers. Examine a lot of ordinary thermometers for sale in a store, and you will find them varying through quite a number of degrees. Not all can be right. Not long ago Dr. Phillips came along with a thermometer of reliability, and I found upon comparison that the thermometer in my cellar, registered 5 or 6 degrees too high. It was a rickety old affair whose health had not been improved by a fall which had displaced the glass tube. I adjusted the tube to agree with his, and was glad to find that two other thermometers were all right.

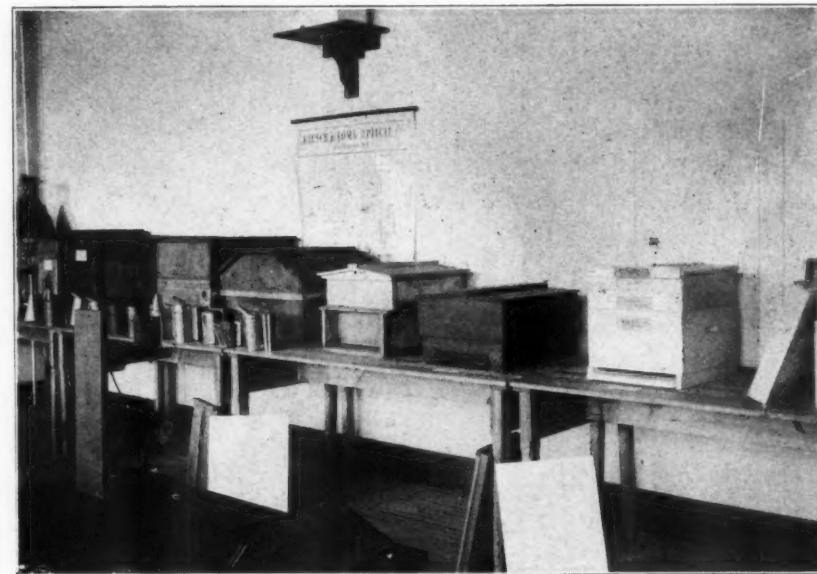
We are told that somewhere about 50 degrees in the middle of the cluster is the point at which bees are most nearly dormant, and that 45 degrees is the favorable temperature for the surrounding air. So with a reliable thermometer, the beginner may think he has no difficult problem. But he will find difficulties. If he does not know for certain whether his thermometer is reliable, then a safe advice is: "Find out at what point the bees are most quiet in *your* cellar by *your* thermometer, and then try to keep your cellar at that temperature." Safe advice to give, but not so easy to follow.

In the first place it is not so easy as might be imagined to decide when bees are most quiet. There is no way of measuring the degree of quietness. Stand in the bee-room today and listen to the murmur of the bees. Then stand in the same place tomorrow and listen. You can hear the murmur all right, but can you remember the noise of the previous 24 hours clearly enough to say whether it was greater or less, unless the difference be very great? Another trouble, especially in a very windy country, comes from the noise made by the wind outdoors. It does not take much of a wind outdoors to drown out quite a murmur in the cellar. So it is hard to know whether the noise you hear is made by the bees or the outdoor wind.

Another trouble is that the temperature is not the same in all parts of the room. It is considerably colder at the floor than at the top of the room.

One might think that the ideal would be to have the bees in a cellar so quiet that one could never hear a sound from them. I never had that experience. There is always at least a low murmur like the sound of a gentle breeze among pine trees. Latterly I am inclined to the opinion that a continued silence, with 50 or more colonies in a cellar, is not only unattainable but undesirable.

An account of some observations



ANOTHER VIEW OF THE EXHIBITS AT AMHERST. (See page 267.)

may not be without interest. Last winter there were in my cellar 93 colonies piled 4 high. As the difference of temperature between the bottom and the top hives amounts to several degrees, I thought I could make some comparison that would be helpful. March 28, at noon, the cellar door having been open all forenoon, the temperature at the bottom of a pile near the center of the room was 43 degrees, and on top of the pile 48. (That 5 degrees difference was a little more than the difference between the two hives, as the upper thermometer was on the *top* of the upper hive, and the lower thermometer should have been on the top of the lower hive. But that was not convenient.) I might classify the colonies into 4 kinds: Those that were entirely silent, from which I could hear no sound until I had blown in the entrance; second, those from which I could hear a low murmur by listening carefully; third, those whose murmur could be plainly heard; and fourth, those that might be called noisy. Here is the result:

Bottom hives: 3 silent; 9 low; 9 murmur; 2 noisy.

Top hives: 4 silent; 9 low; 9 murmur; 1 noisy.

So far as that showed anything, it showed there was not much difference between the upper tier and the lower, which implies that the best point of temperature would be somewhere between 43 and 48, possibly the traditional 45 degrees.

I then closed the door so as to allow the cellar to become warmer. At 6:30 p.m. it was 46 degrees at the bottom of the pile and 53 at the top. It seems a bit strange that there should be a difference of 7 degrees between bottom and top in the evening, and only 5 degrees at noon. My readings may not have been made with utmost accuracy;

certainly they were not made with the greatest exactness. At any rate, here was the result:

Bottom hives: 2 silent; 12 low; 6 murmur; 3 noisy.

Top hives: 0 silent; 6 low; 11 murmur; 6 noisy.

That seems to indicate that bees are more quiet at 46 degrees than at 53, and leaves it still possible that the traditional 45 degrees is all right. But I don't count that there is anything so very reliable in these observations, so far as they go. My ear is sufficiently musical so that I can measure relative pitch; but I haven't much confidence in my ability to measure relative volume.

A factor should be mentioned that may make a difference. Years ago we were told that at intervals bees had spells of waking up, and shifting their position so as to be nearer the source of supplies. Without making any special observations regarding the matter, I had become skeptical about it, and inclined to believe it one of those traditions that pass current in beedom because no one has taken the pains to disprove them.

But I am not so sure about it. In the observations at noon, just mentioned, there were 2 noisy colonies. It so happened that I remembered where they were, and in the evening there were no noisy ones in the vicinity. There were, however, 3 noisy ones in the lower tier in the evening, 3 that had not been noisy at noon. Moreover, while the lower tier was in general more quiet than at noon, there were more noisy ones in it in the evening than at noon, and no colony was noisy both noon and evening. Some one may say, "But didn't you stir up the bees so as to make them noisy?" I don't think so. I simply moved quietly from one hive to another, holding my

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THE APIARY BUILDING AT THE COLLEGE AT AMHERST, MASS.—(See page 267.)

ear to the entrance, and I don't believe the bees were disturbed by it at all. If my listening made them noisy, there should have been more noisy ones than those few. Still, I am not sure. Sometimes a colony is stirred up by the mere odor, perhaps, from my head.

So it looks true that colonies have noisy spells without anything being wrong, and if that be the case, it follows that with 50 or 100 colonies in a cellar there might never be a time of entire silence in the room, although some colonies might be silent at most times. That explains my saying that a continued silence may be undesirable if the periodical waking up is a normal performance.

With a difference of 5 to 7 degrees between the top and bottom of a pile, it is impossible to have all the bees in a room at the same temperature. The nearest to having all at the best temperature, supposing 45 degrees to be the point, is to keep the thermometer hanging just inside the door that enters the bee-room from the furnace-room, some 5 feet from the ground, as I find at that point the temperature will usually be about the same as at the middle of a pile in the center of the room.

Like enough bees will stand no small variation of temperature without any great harm—possibly from 30 to 50 degrees—provided other conditions are all right. All the same, the nearer they can be kept to the degree of greatest quietude the longer they can stand confinement.

It occurred to me that by taking a single colony and noting its behavior, I might do better than to give my attention to a number. If I could begin at or below the point of greatest quietude, and then raise the temperature of the cellar, listening to the bees at the various degrees of temperature, I might learn something. It was so late in the

season when this occurred to me, that the weather was not cold enough to begin very low, only as low as 45 degrees.

April 2, the bees seemed quiet in cellar, so far as I could tell with the noise of the outside wind. The window and doors had been wide open, and a gale had been sweeping through the cellar, so that the air could not be otherwise than pure. A thermometer on the top of colony No. 2 showed 45 degrees, the same as outdoors. Putting my ear to the entrance of the hive, I could hear only a low murmur, and it seemed to me that I could hear just a very little rattling of the wings such as bees make when it is too cold for them. But I could not make sure of that. If, fortunately, they were just a shade too cold, then I ought to be able to catch a point of entire silence with the rising of the temperature, if there is a point of temperature at which bees are generally, if not always, silent. This was at 8 a.m. I immediately closed the window and the outside door, leaving open the door between the bee-room and the furnace-room. At 8:30 the thermometer on the hive stood at 49 degrees; at 9 o'clock it was 52; at 10 o'clock, 53; at 11 o'clock, 55.

Much to my surprise—and I may say to my disappointment—during these changes of temperature, I could discover no difference in the murmur of the colony. If there was any difference it certainly was very slight. At 11 o'clock, as stated, the thermometer on the hive showed 55 degrees, and the outdoor temperature was 54. I shoved the fire in the furnace, and at noon it was 56 degrees on the hive. I thought there was a distinct increase of the murmur, but it is hard to be positive about a thing for which you have no absolute measure, especially when you must remember from one hour to another. At 12:40 it was 62 degrees; at 1

o'clock, 64, and by this time the bees were quite a bit noisier and were irritable, so that the mere presence of my head at the entrance (was it the odor?) stirred them up. At 1:30 p.m. it was 62 degrees, the fire having been dampened, and by 3 o'clock it was 60, where it remained until 6 p.m., when the cellar was thrown open. During the afternoon the noise of the colony remained, I think, about the same as at 11 a.m. I should say the bees were noisy, but not nearly so noisy as they are sometimes, nor did they seem inclined to run out of the hive as they sometimes do.

I was little the wiser for my observations. I know the bees are quieter at 45 degrees than at 64, and I think that the point of greatest quietude—if there be such a point—is somewhere not very far from 45 degrees. But I certainly have no positive and exact knowledge about it, and I respectfully refer the problem to Dr. Phillips.

(Concluded in September.)

Feeding Bees Sugar Syrup

BY GEORGE SHIBER.

A MINISTER friend of mine, in the course of a talk, made the remark that "we should not wait until our friends are dead before giving them the bouquets they are entitled to." I believe he is right. I need the largest one I have. I wish I could have it even brighter and larger than I can build with this pen.

Turn to page 78 of the American Bee Journal for this year, "Effects of Feeding Sugar." I have read it over several times. It reads truth and common sense. No one could doubt that the writer had been in the bee-yard and handled bees—yes, handled them "a whole lot." He may live to be a very old man, but he never will write a sounder article than that.

I was a blundering lad just commencing with a few bees in 1888, and for years later there were bee-keepers who recommended, in the bee journals, to extract the honey from a colony in the fall and feed sugar syrup, that the difference in the price of the two would be the gain. As the editor says, "It looks good," I am sure it could only be attended by loss. Never in a single case could it be made a profitable operation. Exceptions may be thought of, such as honey-dew in whole or part, or poor honey; but even then I do not think it would be the best thing to do to extract all the stores in the fall and feed syrup.

By the way, has anybody done it on a very large scale? Take an apiary of 200 colonies, and extract all of the honey in the several brood-chambers in September. Say! you will have a job on your hands. It is much easier said than done. Oh, yes! it can be done, but I should want good wages for the work.

What shall we do if the stores are not of so good a quality as we should like, and would not winter the bees

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safely? The simplest way would be to give them about 15 pounds of sugar syrup of a 2 to 1 mixture (2 pounds of sugar to 1 pound of water). This would be their winter food, *i. e.*, their cold weather food. The honey-dew would be used for building up in the spring, and would be satisfactory for that.

The stores in a normal colony the last of September will occupy this position in a 10-frame hive: The 4 outside combs will be pretty well filled, the 2 next will be about half filled, and the 4 center combs will be nearly empty, except at the corners. The syrup we feed will go in these 4 center combs, right where it is wanted for winter.

Mr. Byer, I am sure, will not lie awake worrying about whether his bees will winter successfully on said combs of honey. He doesn't need to. But he should worry some about getting enough in the hives for all the bees' needs in the spring. I regard it as almost a joke, this necessity for a winter brood-nest of empty combs below the honey, for my bees cluster clear to the top of the frames, and over them and under the cushion during winter.

Randolph, N. Y.

[We are proud to say that the editorial praised in this article is from the pen of Dr. Miller. Like Thiers, the first president of the young French republic, our co-editor is brighter in his 80's than at any other time of his life.—C. P. D.]

Extracted Honey Preferred

BY C. F. GREENING,
(Ex-Vice-President of Minnesota Bee-Keepers' Association.)

N the American Bee Journal for May, I note a slight controversy, "Comb vs. Extracted." I advocate extracting. With a little diplomacy I have had no trouble during the last 36 years in disposing of all nice extracted honey for home consumption.

Now for my method. First, teach your customers that they are getting more sweet by eating extracted. Second, who would ask his stomach to digest that which raw muriatic acid won't affect? No wonder we are troubled with stomach disorders when we demand it to digest beeswax. Again, the customer gets 25 percent more weight of clear honey for a dollar than he would comb. To work up a trade I do as follows:

I invite my prospective customers to call on me and see me extract honey; not strain it from mashed-up old combs, brood, bee-bread, and miller grubs. Let them see that I extract honey only, the other ingredients I do not get. Invite the little "tots" to come in, and tell them to bring a few hot biscuits with them, and we will have a feast, as I will furnish some butter and all the honey they can eat. I have done thus repeatedly, and made it win every



APIARY OF GEO. SHIBER, OF RANDOLPH, N. Y.

time, besides putting a happy smile on each child's face. I ask my little friends to bring their syrup pitcher, and I fill it with nice clear honey for them; then note how soon the parents come with a gallon pitcher to be filled, and pay for it too, and order a supply for winter.

Put your honey up in nice 1, 2, 5 and 10 pound glass jars with a neat, clean label, "Warranted absolutely pure extracted honey," and with your signature attached. If you have any standing in the community for reliability, you will be surprised at the amount you will sell right at home. But I think I hear you say, "It costs to give 5 or 6 gallons of honey away." Well, it costs to advertise in any paper, and I eliminate the middleman by getting at the customer direct. I can produce more than 1½ pounds of extracted honey to one of comb. I am extracting from combs that I have used for 20 years, and they appear good for 20 more; good and tough, won't break or melt down.

In good years I have no trouble in securing 150 to 200 pounds per colony. In 1912 I sold for cash \$86.45 from 6 colonies, without one cent of cost for sections, guides, cases, or extra work. This year I am after a new record, and propose to get an average of 225 pounds per colony. My swarming for the year is done during May. I have not had a natural swarm for 5 years, but simply tell the bees that I will attend to that, and their duty is to gather honey, and to keep everlasting at it. No more demoralization during the honey-flow, by swarms piling out when they should be in the field. No stringing up to form wax to build new combs, losing the good honey-gathering time, and leaving the parent colony worthless for several days.

It took me 30 years to discover that my children did not have to watch the

bees for about 4 months every summer, and now the grandchildren escape the duty. It is so easy when we know how.

Grand Meadows, Minn.

[Friend Greening, we are with you on every point but one, and that is the damage that the broken crumbs of wax may do to the stomach. We know that doctors differ on many points of similar nature, so we will leave this matter for them to settle, but we cannot help thinking that the indigestible wax is harmless in the intestinal tube. We believe it is eliminated without harm.—EDITOR.]

The Law On Sugar-Fed Bees

BY FREDERICK A. GRIFFITH.

A MISSOURI State court at Kansas City recently declared 170 hives of sugar-fed bees within 100 feet of a city neighbor's house a nuisance, and gave a restraining order compelling the bee-keeper to move his bees within a month.

The testimony showed that on account of being sugar-fed all summer, the bees, like rich men's pampered offspring, were fat, lazy, and prone to forage close at home. Consequently, they foraged on every available sweet inside or outside of the neighbor's house; stung his baby into insensibility, and kept the whole family in constant dread.

The writer, who is a lawyer as well as a bee-keeper, and defended the bee-keeper, was convinced by the testimony of many witnesses that the bees in this particular instance were a nuisance, and realized before progressing far that it was a "hopeless case." The

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court, by his decree, showed that he also shared in that opinion.

The National Bee-Keepers' Association, after investigation, recommended an amicable settlement beforehand, if possible. But the bee-keeper was obstinate, and determined to fight it out. He called as a witness Mr. M. E. Darby, of Springfield, State Inspector of Apiaries, but Mr. Darby was not permitted to testify, because he had no personal knowledge of the facts in this particular case, and the court precluded any testimony as to other people living close to bees without being disturbed.

The evidence disclosed that the bee-keeper had established his bees at the outskirts of town, which had gradually grown up to his bee-yard.

It used to be the law that if a certain noxious or objectionable trade was already established in a place remote from habitations, and persons afterwards came and built houses within the reach of its noxious effects; or if a public road was made so near to it that the carrying on of the trade became a nuisance to the person using the road: in those cases the party was held entitled to continue his trade, because it was legal before the erection of the houses, or the making of the road. That was on the supposition that persons who erect and occupy dwellings where they may be affected by a nuisance already erected and maintained, have no legal right to complain of the annoyance it may occasion them.

But that is not the law of modern civilization. The law broadens with education and experience, and the modern broad-minded rule, as now laid down by the courts, is that such a doctrine would render the property of others subordinate to the purposes of him who might, before they had erected their dwellings, have devoted his own property to an offensive and unwholesome business. Bee-keepers, as a whole, are the most law-abiding citizens in the universe, but there is no sound principle of law that will protect any man in depriving others of the substantial use and enjoyment of his property. In other words, the individual should submit himself to the convenience of the crowd.

Kansas City, Mo.

[It seems to us rather strange that any one should feed bees all summer, since it would be a very expensive outlay. But there is nothing strange in the annoyance that may be caused to near-by neighbors by an ill-managed apiary. We had a friend once who was in the habit of opening his hives without smoke. The bees rarely stung him, but they would sting the neighbors, when disturbed. It was with difficulty that he was prevailed upon to use more caution, when all trouble was brought to an end.

In the above case, we are under the impression that an investigation would have shown that the bees were short of stores, instead of being "fat and lazy."

—EDITOR.]

Original Color of Wax

BY C. P. DADANT.

In the April number, page 131, one of our correspondents says that "the darker the honey, the darker the wax will be." We reserved this question for a special discussion, for we felt that this statement needed correction.

The color of wax produced by the bees ought not to be difficult to ascertain. Yet if we look back among authorities, we find that there are a number of statements leading to the idea that wax is not always white at the moment of its production. Quite a discussion was elicited, in *L'Apiculteur*, years ago, by the statement made in that magazine, by an observer, Mr. Gaurichon, that the color of combs depended upon the temperature at the time they were built. He held that wax produced when the temperature is 92 degrees is yellow, while that produced at lower degrees is whiter and whiter, as the temperature lowers. At the very time when we read his statements, our bees were producing the whitest kind of combs at a temperature which was fully blood heat. In fact, I do not believe that it is possible for them to manipulate wax unless the warmth of the hive is normal. But every large producer knows that during the production of white honey, whether white clover, alfalfa or other plants, the wax is white whether the temperature be hot or cold.

Some writers assert that wax is originally pale yellow. Cowan says, "Wax, when pure, is pale yellow, but sometimes nearly white, and the coloring is due, as Dr. Planta has pointed out, to pollen consumed by the bees." (The Honey-Bee.)

Huber, in making experiments (Un-edited Letters), made a triple test of comb production with colonies fed with honey, dark brown sugar and white refined sugar. Those fed with the white sugar "produced comb less white than those fed with either brown sugar or honey."

Reaumur, who published his work on insects in 1740, was one of the most capable scientists of his time, and a member of the Royal academies of France and St. Petersburg, and of the Royal Society of London. No one then knew that bees produced wax by consuming honey. He, however, surmised that it was made by digestion, but thought pollen was the crude material from which it was made. So he called the pollen "crude wax." To prove that it was not real wax, he made several interesting experiments, such as kneading it with the fingers, trying to melt it by the heat of the lamp, or throwing it in water, where it sank instead of floating as wax does.

Although unable to detect how the wax was produced, he readily ascertained and proved in his *Mémoires*, Vol. V., page 428, that "any new comb is white, differing only by its greater or less whiteness. I have seen sometimes that the white of the newly constructed combs yielded in no way to that of the finest candles near which I had placed them.

"Among the newly made, those which

appeared the least white, might be compared to inferior white candle, or to such as, having been kept too long, has turned yellow. As they grow old they turn yellow, the oldest becoming of a brown color which approaches the black of soot. The art of bleaching wax appears to be thus only that of removing the foreign matter which has penetrated it."

Bevan, page 390: "At first the combs are delicately white, semi-transparent, and exceedingly fragile; in a short time their surfaces become stronger, and assume more or less of a yellow tint."

Prof. A. J. Cook, in his "Bee-Keepers' Guide," says: "In the transformation into comb the wax may become colored. Dr. Planta has shown that this is due to a slight admixture of pollen. It is almost sure to do this if the new comb is formed adjacent to old, dark colored comb. In such cases chippings from the old soiled comb are used."

Dzierzon says in "Rational Bee-Keeping": "In continuing their structure, the bees, often bite off old wax and use it in making cells. When, therefore, bees build new cells in the hive in continuation of old ones, these new cells are of a darkish color at their commencement, and only gradually assume the white color which new wax possesses. Queen-cells are generally of the color of the comb on which they appear, because the bees take the wax for royal cells chiefly from cells in the neighborhood."

Girard, in "Les Abeilles," says that "the little scales of wax which one may remove from the wax-secreting organs with a needle, are more brittle and less white than those of fresh built cells." He ascribes this to a modification caused by the saliva of the bee. The fact is that the manipulation by the bee kneads the wax and changes its "pearly whiteness" into a dead white color. The same change may be made by the apiarist in chewing a piece of wax. He will render it less transparent but lighter in appearance.

Cheshire, Langstroth and others agree that the combs are white when first built. Root speaks of new wax as "of pearly whiteness which soon becomes yellowish."—A B C of Bee Culture.

Whether or not the bees color the wax by consuming pollen, there is no doubt that the gathering of pollen of bright color has some influence upon the color of the wax shortly after the comb is built. Some flowers, such as the Spanish-needle (*Bidens*), yield bright yellow pollen in profuse amounts. The bees which visit the blossoms appear to have rolled in it. This bright color is promptly imparted to everything about the hive, the combs of course becoming tainted quickly.

In a conversation which I once had with an experienced wax bleacher (long ago deceased), Mr. Merkle, of St. Louis, I was informed by him that the wax produced along the low lands of the Mississippi and Missouri rivers retained its bright, deep yellow color so persistently that they never succeeded in making it perfectly white by the ordinary bleaching methods.

Mr. Wilder, to whom this subject

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was mentioned, wrote as follows: "Like you, I know that dark honey does not produce dark wax. If anything it is the contrary. Whether the other colors affect the color of combs, I can't say. I am inclined to think that the color of the pollen the bees gather when the comb is built influences the color of the comb. The bitter weed which yields a very yellow pollen and a very yellow honey gives us a bright yellow comb. But when I chew this beautiful yellow comb for some time, it loses its yellow color and is about

the color of best grade wax.

"Partridge pea, which does not yield nectar from the blossoms, but from the base of the leaves, gives us nearly water-white honey. At the close of the season it blooms, but it yields only pollen from the blossom. This pollen is very yellow, and colors all the combs of beautiful white honey. We will take further notice of these matters and report."

In concluding this study, we may assert positively that dark honey does not give dark wax.

Hamilton, Ill.

make trouble when a step-mother is given them. So the thing to do is to get the field-bees out of a hive before the queen is given. That is a thing very easily done. Just set the hive in a new place, and leave on the old stand a hive with one of the brood-combs. When the gatherers return from the field they will go to the old stand, and in 24 hours the old hive will have in it no bees more than 16 days old. As a matter of convenience I lift the old hive from its stand, setting it close by, put the new hive with one frame of brood on the old stand, put on this the supers if there are any, and then put on the cover, and then set the old hive over all. At the same time the caged queen is put into the upper hive. By the time the bees have eaten out the candy and liberated the queen, or some time before it, all the field bees have joined the lower hive, and the queen is kindly received by the younger bees. In two or three days, when the queen has begun to lay, the hive may be returned to its original place, and the fielders will make no trouble when they enter.

DR. MILLER'S ANSWERS

Send Questions either to the office of the American Bee Journal or direct to
DR. C. C. MILLER, MARENGO, ILL.
He does NOT answer bee-keeping questions by mail.

Saving Empty Hives

Please tell us when we shake on foundation for foul brood whether the frames should be new, or can we cut the old comb out clean and use the frames again? I don't want to buy frames for 50 hives if it is unnecessary.

ANSWER.—Generally it is considered best to burn up the old frames, but when one has so large a number as you have I think it pays to clean them up and use again. At any rate, that is what I did with a number. After cutting out the combs I put the frames into a big iron kettle holding a half barrel of water into which was put 2 pounds of concentrated lye. The water, of course, was heated, and the frames were kept in the kettle until all wax and glue was melted off. Then the frames were rinsed in cold water to get off the lye.

Tearing Down Queen-Cells

What causes the bees of a swarm (taken from a building and given a frame of brood for encouragement) to start and seal several queen-cells, and in a few days, less than a week, destroy them all?

CALIFORNIA.

ANSWER.—I don't know. It happens not infrequently that when something unusual takes place, such as the introduction of a new queen, or the removal of the brood, as in your case, the bees start queen-cells, and then sometimes tear them down later. It looks a little as if the bees said to themselves, "There's been such a break in brood-rearing that there must be something wrong with our queen, and we must take steps to rear one to take her place." Then, as the queen keeps laying regularly, they say, "The old lady seems to be on her job all right; guess we may as well tear down those cells."

Shifting Colonies—Injudicious Manipulation

1. We had 4 colonies of bees cast second swarms. We put the young swarms on old stands, and at the end of seven days we moved the parent colony to a new stand. Do you suppose the old colony will collect a surplus?

2. We had an immense colony of bees in a double-deck 8-frame hive, or 16 frames altogether. This was the last colony to swarm, and on June 10, it cast the biggest swarm I ever saw. We moved the parent colony and set the swarm in its place. Now it looks to me as if both are extremely populous. I have a notion to let them alone just as they are, and not move the old hive to a new stand. What do you think of it?

3. We have read a good deal about foul brood, but never saw any, and don't want to.

It is our opinion that too much manipulation, such as shook and shaking, have a tendency to lower the vitality of bees, as "Hope deferred maketh the heart sick," may apply to bees as well as to vain humanity. Low vitality means a good chance for disease. We notice that the American people have a great tendency to accept the easy way, regardless of what the outcome may be. They do not believe that "By the sweat of your brow you must earn your bread." I am a great admirer of Nature, and also of the lower insects and animals, and do not care to disturb them from the even tenor of their ways, consequently I think that too much manipulation has a tendency to begin disease in bees. Of course, this may be far fetched. What is your opinion of it?

IOWA.

ANSWERS.—1. Most likely they will be well stocked for winter, seeing that you are having a great flow, and also seeing that the old colony would already have filled with honey all space not occupied by brood and pollen.

2. In such a heavy flow both may do well enough, except that the mother colony may send out an after-swarm within a week or 10 days after the prime swarm.

3. There is much to be said on both sides. Injudicious and ignorant meddling may do a lot of harm; intelligent management may do a lot of good. As to foul brood, when it happens that bad cultivation of the ground will start a lot of weeds without any seeds of weeds being present, then it may happen that you can get foul brood started without any of the bacilli or spores that cause the disease. At the same time it is true that if a colony is weakened by bad management, it will succumb to disease where a vigorous colony might entirely resist it.

Introducing Queens

I have had trouble in introducing laying queens on account of the bees starting cells. I have always lost about half of the queens I tried to introduce. Would it be perfectly safe to shake about a pound of bees taken from three or four different colonies into an empty hive containing about three combs with no brood, and confine these bees three or four days; in the meantime introduce a queen in the regulation way, brood to be given later? Would these bees be likely to swarm out after they were released?

OHIO.

ANSWER.—Yes, practically the plan has been used, the bees being put in the cellar or other dark place. They ought not to swarm out afterward.

Let me give you one of the kinks I have used in introducing a valuable queen. It is the old bees, and not the youngsters, that

Equipment for Comb-Honey—Locations

1. I wish to engage in the production of comb honey, what style and size of hive would you advise me to adopt?

2. Would you consider the Danzenbaker hive practical in a large apiary? If not, please give your reasons.

3. If you were to start again from the beginning, intending to make bee-keeping your life calling, and had no ties to bind you to any particular locality, where would you be likely to settle?

ILLINOIS.

ANSWERS.—1. The 10-frame dovetailed would be a safe venture.

2. A single objection would bar it out for your use. I had more pollen in sections with one Danzenbaker hive than with 50 others, probably because of its shallowness.

3. I don't know. I would do a lot of investigating before settling. What might suit me might not suit you. I'm growing more and more to think that there's a good deal of equality in locations, advantages and disadvantages. I used to envy Californians. I'm not sure I would care to be there now, since knowing more fully about it. In general, the place where one happens to be is "not so worse" as it might be.

Finding Queen—After-swarms

1. It seems to me that directions as to shake swarming, when to be practiced on colonies with clipped queens, are deficient in that it is not stated what is best to do when one cannot find the queen so as to cage her. This may be caused by the queen remaining in the hive. I have not been able in any case this year to find the queen.

2. Do you think it better to sit while examining colonies, frame by frame? There might be less danger of losing the queen than when standing upright, for when so doing, the frame is so much farther away from the top of the brood-chamber.

3. I have just seen that the parent colony of a hive that swarmed about a week ago, and which I placed next to and at right angles to the hive containing the swarm, has all of half a dozen queen-cells. Will this, if left by itself bring on after-swarms, or will the first emerging queen kill the others? It would seem to be of some advantage to have these cells undisturbed, as should one queen fail to return from her mating flight, there would at once be others to take her place.

PENNSYLVANIA

ANSWERS.—1. You can get along very well without finding the queen at all when you shake a swarm. Shake and brush all the bees from the combs you take away, and then you will be sure that you have not taken away the queen. If you want to take with the combs enough bees to take care of the brood, put an excluder over the hive, set an empty hive-body over this and put



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therein the beeless brood. In the course of an hour or so enough bees will have gone up, when you take the brood away with no risk of taking the queen. Of course, you can shake back part of the bees if more have gone up than you want.

2. So far as losing the queen is concerned, I think it makes very little difference. Even if it were the other way, and there should be just a little more danger of losing the queen when sitting, I should still prefer to have a comfortable seat. A person of youth and vigor may stand it to work all day standing up, but he can stand it at least a little better to sit down. I think I am lasting longer because I made a practice of sitting in my younger days. But I think the queen is a little bit safer when you are sitting.

3. Left to itself, the mother colony with a lot of queen-cells will be likely to send out one or more after-swarms. If there should be a cessation of the honey-flow, that might discourage further swarming. There is no such thing as a virgin failing on her wedding-trip and a younger sister taking her place. When the first virgin emerges from her cell, she makes it her business to slaughter all her baby sisters in their cradles before making her wedding-trip. If the workers allow this, there will be no more swarming. If the workers stand guard over the royal youngsters and prevent the young queen from killing them, then she will issue with a swarm. The thing for you to do is to move the old hive away just a little before it is time for the second swarm to issue. Never mind about that right-angled business. When the prime swarm issues put it on the old stand with the mother close beside it. Then a week or so later move the mother close beside it. Then a week or so later move the mother to a new stand 10 feet or more away. That will deplete the mother of all its field-force, and the workers will feel so discouraged that they will allow the oldest virgin to finish the others.

European Foul Brood

We would like very much to have you give your experience with European foul brood. We find that the blacks get it the worst in the majority of cases. We have been re-queening with Italians the past two years, but that does not seem to help much; our home yard, where we have the best blood, seems to be the worst.

The disease appears about May 1 in this locality in a few old cells; mostly those that are capped over. About May 15, we find a few bad cases where the white larvæ has died, and from May 15 up to July 1 there are very few if any colonies that do not show a few diseased cells. We may go through a colony and find only a few cells, and within the next 10 days all the brood will be dead. It is worse this year than we ever saw it before. We have had a light, slow honey-flow since the first of May.

We are practicing your plan mostly, making the colony queenless for 10 or 15 days, then giving a ripe cell or virgin. But where the case is bad the bees will not clean up before the queen commences to lay. Even if they do the colony will not build up in time for the honey-flow, and the next year they will catch it as quickly as the rest.

We divided one colony that did not show any disease, leaving three frames of larvæ and queen on the old stand. The brood and bees we set to one side and gave a queen from a diseased colony, and while it shows a few cells, it is strong enough to work in the super. The colony with the three frames of brood and the queen took the disease and had to be treated.

None of the colonies are "boiling over" with bees as they should be. We have about 100 colonies to care for, and it looks rather discouraging. Any help you could give us on this matter would be greatly appreciated.

IDAHO.

ANSWER.—I can add very little to what I have already given in this Journal, unless it be to emphasize the importance of having

colonies strong, and to add to that the importance of being very prompt in treatment. You are quite right that European foul brood is a very persistent disease, and yet for your encouragement I may say that I am getting good crops of honey from colonies that have shown the disease. To be sure, it takes very little European foul brood to pull down the yield of honey, yet at the same time I can refer you to 2 colonies that were affected this year, from each of which I took 3 supers of 24 sections each before July 10, with 5 supers still left on each, and others have done nearly as well. The 4 or 5 supers left on the hives in these cases are crammed with bees, unless it be the top one, which may not yet be occupied.

You say you "may go through a colony and only find a few cells, and within the next 10 days all the brood will be dead." Don't wait that 10 days, but treat as soon as you find a few cells. In my apiary a colony that shows a single cell of the disease is at once treated.

You say, "None of the colonies are boiling over with bees as they should be." It's your business to make them strong, if you have to unite three into one all over the apiary. You'll gain by it in the long run. If you cannot get them strong enough in a single story, then use two stories or more.

You say you are practicing my plan mostly of "making the colony queenless for 10 or 15 days, then give a ripe cell or virgin." If you will look up my later writings, you will find that is not my plan. The way you are doing leaves the colony without a laying queen for 20 or 25 days, which depletes the colony unnecessarily without any compensating good. I think I get as good results by leaving the colonies 8 or 10 days without a laying queen. If the case is at all bad, and the queen is not vigorous, I kill her, and at the same time give a virgin just hatched or a ripe cell, so that in 8 or 10 days from the time the old queen stopped laying the new one will begin. But I rarely treat a colony in that way now, for I don't allow a case to get very bad, and the queen will generally be still vigorous. If a case is found early in the spring, I wait until the honey-yield is on, but after that if I don't wait after a single diseased cell is found. I cage the queen for 8 days, and that is all there is of the treatment. But there is no use to fool with a weak colony.

Here's the whole thing in a nutshell: When the flow is on, make the colony strong, leave it 8 days without eggs being laid in the hive, and in most cases the cure will be complete.

Not Working in Supers

I secured a colony of bees this spring. They have swarmed nicely, so I now have 3 colonies. The fields are full of white and red clover, but still my bees are not gathering honey. What can be the cause of this? Would you advise new queens?

WISCONSIN.

ANSWER.—When bees throw their energies into swarming it interferes with their storing. If your colony had turned its whole attention to storing instead of sending out those 2 swarms, you'd have had a tidy amount of honey. But with its force divided up into three parts, you may get little from either of the three. But you might have had one swarm and still a fair amount of honey. Here's what to do next time: When the prime swarm issues, hive it and set it on the stand of the parent colony, setting it close beside the parent. About a week later move the parent away to a new stand. That will throw all the field-bees of the parent into the swarm, and

the swarm being thus strengthened ought to do good work on the harvest if it is a year of good harvest. Of course, it is possible beside all this that you might have better stock. That's a thing I can't guess about. But it would be a safe venture to risk a dollar for an untested Italian queen, and then you could see whether the new blood would do better than the old. I might add by way of postscript, that if you ever get your bees trained so that they will never think of swarming at all, you can count on a good deal more honey. Let me hasten to add that I have never been able to get all my bees into that way of thinking. Yet there are some of them each year that never start a queen-cell, and they are the ones that give bumper yields.

Prime Swarms Return to Parent Colony

My prime swarms invariably, after I hive them, leave the hive and return to the parent colony.

My hives are all new and up to date, and I can't account for this. If you can cast a little light on this subject it will be appreciated.

MINNESOTA.

ANSWER.—That's just the way my bees do, and it's a good deal better than to have queen, bees, and all going off to return no more. The reason my bees do so is because the queens' wings are clipped so they cannot go with the swarms, and when a swarm finds out the queen is not along there is nothing for it to do but to return to the old home. Of course, I don't know anything about it, but as you have things "all new and up to date," my guess would be that you have lately begun bee-keeping, and have bought colonies with queens whose wings have been clipped. If that isn't the right answer, then I don't know what is the answer. It occasionally happens, where queens are not clipped, that a swarm returns because something has happened to the queen so she cannot fly, but to have it happen "invariably" with whole wings is something beyond me.

Bees Carrying Out Young Live Bees and Larvæ

Why do bees bring out young live bees and larvæ, and can anything be done to stop it? Has the weather anything to do with the case?

NOVA SCOTIA.

ANSWER.—It is the work of the larvæ of the wax-moth, generally called wax-worms, and the weather has nothing to do with it. About the only remedy is to keep strong colonies of Italian blood. Indeed, a rather weak colony of good Italian blood will keep the moth at bay.

California Privet—Alfalfa in the East

1. Can you tell me if California privet is a honey-producing plant, and, if so, whether it produces a good quality of honey?

2. Also, does alfalfa yield honey in the East? I have seen it stated several times in prominent farm journals that alfalfa gives no nectar in the East.

3. Where can I obtain the most complete list of honey-producing plants?

I want to take this occasion to congratulate you on your Journal. It improves with each issue, and it is a great pleasure to peruse its pages.

NEW JERSEY.

ANSWERS.—1. I don't know. Who can help us out? My guess is that it doesn't amount to much, merely from the fact that little or nothing has been said about it.

2. I think the rule is that east of the Mississippi river alfalfa never yields any nectar to speak of. Alfalfa grows finely on my place, and occasionally I have seen a few bees on the blossoms, but never to amount to anything, and I think this is generally so east of the Mississippi. Seems to me, how-



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ever, that a more favorable report has been made by some one in Wisconsin or New York.

3. You will find no more complete list than you will find in Dadant's Langstroth or Root's A B C and X Y Z.

Value of Colony, Swarm, Etc.

1. What could I afford to pay for a swarm of bees hanging where they clustered if it was the first that issued from the hive?

2. What would a good strong colony be worth if it was in an old box-gum; or how much if it was in a movable 8-frame hive?

3. How would it do to take 4 frames from a strong colony, the 4 frames being covered with bees and almost full of brood, but no queen, put them in a hive, and place them on a new stand? Do you suppose that it would do any good? My bees are doing fine.

KENTUCKY.

ANSWERS.—1. I don't know. So much depends. One swarm may have two or three times as many bees as another, even when both are prime swarms. In some places you might get a swarm for a dollar from some one who got little from bees, and in another place an experienced bee-keeper might not be willing to sell such a swarm for five times as much.

2. Again there would be great variation. A colony in a movable-frame hive might be worth in some places \$7.00 or more, in other places \$5.00 or less. To a beginner, a colony in a movable-frame hive might be worth \$3.00 or \$4.00 more than one in a box-hive; to an experienced bee-keeper the difference wouldn't be nearly so much, for he could easily change to a movable-frame hive.

3. It would do after a fashion, but you cannot rear a queen of best quality in any such slipshod way.

Best Bees for Washington

Owning an 80 acre tract of land in White Salmon, Wash., which already has 20 acres of bearing orchard, and balance of which is being cleared, and will be put to orchard and berries, with probably an abundant range, I intend next spring to place thereon a few colonies of bees.

If you will kindly do so, I would appreciate your advising me the best work on bee-culture for a beginner, and also tell me the breed of the bee best adapted to my needs, and where it would be best for me to secure them with which to start my venture.

MINNESOTA.

ANSWER.—Dadant's "Langstroth on the Honey-Bee," and Root's "A B C and X Y Z of Bee Culture" are standard works and excellent.

If you want the bees merely for the purpose of fertilizing fruit blossoms, there is probably little choice. For the production of honey you can hardly do better than to get Italians. A copy of the American Bee Journal will give you a list of reliable names from whom you can obtain bees, and out of them you can choose the one located most conveniently. It will be better to obtain bees from as short distance as possible, on account of the high express charges.

A Living from Bees

I have 37 colonies, and have had some experience in handling bees. Would you advise a man to enter the bee-business depending upon obtaining honey—the profit to make a living income?

OHIO.

ANSWER.—The number of men who make their entire living from bees is very small. Nearly all who engage in the business have some other business in connection with it. Unless a man has had experience with bees so that he feels sure from that experience that he can make a permanent success at it, it would not be advisable for him to think of undertaking bee-keeping as a sole business.

Even then, in most places, he should have enough ahead to be able to stand a year or more of failure; for in most places a year of failure of the honey-crop will sometimes occur, and sometimes two or three such years will come in a string.

Returning Swarms—Good Queens

1. I have, or did have, a very strong colony from which I made a strong division. They had been doing very good work in the super until today, when they swarmed. Could the swarm be hived back into the same hive if the new queen or queen-cell was destroyed, and would they continue to work in the super?

2. Does it impair the quality of the queen to clip her wing?

3. What would you think of a queen that fills every cell in most of the combs with eggs, and in numerous places has eggs in half-built cells, and in cells filled with bee-bread?

4. Is such a queen the kind to have with a strong colony in the honey season?

5. What should a person do with a colony at wintering time that is so strong that it would properly fill two hives, but only having one queen?

ANSWERS.—1. When the colony swarmed there were a number of queen-cells in the hive. If you destroy all of these and return the swarm, in probably 49 cases out of 50 the bees will swarm out again within a very few days. If you destroy the old queen and all the cells but one, no swarm is likely to issue. Or, destroy the old queen and listen each night with your ear to the hive for the piping of the first young queen that emerges from her cell, and the next morning destroy all queen-cells in the hive. The young queen will emerge from her cell and begin piping a week or a little longer after the swarm issues with the old queen.

2. I have kept my queens clipped for many a year, and never could discover that it hurt them a particle.

3. That is just what every good queen should do, except laying in a cell containing pollen. When you find eggs in a pollen-cell you may generally count that laying workers are present, although it is possible that occasionally an otherwise good queen may do such foolish thing.

4. Yes, she ought to be all right for that.

5. If the bees cannot be contained in one story, let them winter in two. The probability, however, is that when winter comes the bees will not find themselves uncomfortably crowded in a single story.

Southern Queens in the North—Leather-Colored Italians—Distance Queens Mate

1. Would it do to send to Texas, or other warm countries, for queens? Would they stand the cold up here in New York State and be hardy?

2. Would the golden or leather-colored Italians be the best?

3. Do you think queens would mate with drones a mile away? There is a big woods between us.

NEW YORK.

ANSWERS.—1. So far as I know, queens from the South do just as well as those reared farther north, and just as hardy.

2. There is variation in both, but the leather-colored, as a whole, are generally preferred.

3. Yes, a distance greater than that would not prevent meeting.

Homestead Lands for Bees

Is there any homestead lands in the United States that would be good territory for an apiary?

IOWA.

ANSWER.—I am not well informed as to homestead lands, and I hardly know to whom to refer you for information. In gen-

eral, it may be said that nearly everywhere there is more or less pasture for bees, and the chances are a little better in the newer than in the older regions, because in the older regions the territory is pretty well occupied with bees, especially where pasture is better than the average. Possibly you could get satisfactory information by writing to any one who has given you information in any way about these unoccupied lands. You would likely get some information by applying to the Government offices. Nothing, however, would be better than to visit and see for yourself something about the honey-plants to be found. This thing of finding good locations for bees is a troublesome matter, for just as soon as a good location is found it is likely to be occupied.

Honey-Vinegar

I am told that good vinegar can be made from honey or cappings. Will you give how much honey or cappings to each gallon of water, and how to proceed to make it?

ILLINOIS.

ANSWERS.—I think the most I know about making vinegar is what I have learned about how it is done by Dadant & Sons, and as they are experts at it, I will ask them to give you the information at first hand.

Use one to one and one-half pounds of honey to each gallon of water. Dissolve the honey as much as possible and place in a barrel with the bung removed so as to give as much air as possible. The warmer the place it is stored the better, as this will hasten fermentation.

If you use capping washings for making vinegar, a good way to test if the water is sweet enough, is by the use of an egg. If the egg floats on the surface of the liquid then it is about right.

To hasten fermentation you may also add a little vinegar mother if you have it, to your sweetened water. Full instructions may be found in most bee-books.—EDITOR.]

Changing Stock—Keeping Honey

1. I have 77 colonies of black bees, and use the 10-frame hive for comb honey. I wish to change my stock. What kind of bees will be best?

2. How is the best way to make the change?

3. Is rearing queens the cheapest? How is the best way to rear them?

4. Will comb honey keep in a glass case, 800 pounds or more stacked close together?

GEORGIA.

ANSWERS.—1. Each different race of bees has its advocates, but probably by far the greater number of bee-keepers prefer Italians, so you cannot be far out of the way in adopting them.

2. The quickest way would be to buy a new queen for each of your colonies. The cheaper way, and the way generally adopted, is to buy one or more queens of good stock, and rear your own queens. You can get a tested queen and rear from her, or you can get 3, 4, or more untested queens, and rear from them.

3. How to rear the best queens is not a matter that can be answered in a few words. Indeed, a whole book has been written about it, "Doolittle's Queen-Rearing," and although the book is excellent it has hardly exhausted the subject. To make a success at queen-rearing one should have as a foundation a pretty good knowledge of the general principles of bee-culture, such as can be found in our excellent works on bee-keeping. If you have not one of these already, it will pay you ten times over to get one at once. Even after you have made a thorough study of such a book, with the

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special information in "Doolittle's Queen-Rearing," plenty of questions are likely to arise which will be gladly answered in this department. This department is not intended to take the place of a book on bee-keeping, but to supplement it, and it can supplement it only by having the book come first. It may be that you have already made a study of some good book, and that there are special points that trouble you, in which case I'll be glad to do my level to answer, so far as I can.

4. Yes, if it is in best condition when put in the cases it will continue so unless in a room which is bad about inviting dampness. If the honey is not thoroughly ripened it will not be so well to have in the cases where little or no air can get to it. In that case it is better to have it stacked up in supers with blocks at the corners, so as to allow a space of half an inch between each two supers. A room where damp salt will dry out is a good place to keep honey. In

a place where dry salt will become moist, the honey will become thin.

Pollen on Bees' Feet

I think I have something new this season. My bees have great long things dangling about their feet, and when they alight these things lie on the alighting-board to one side of the bees' feet. They are about $\frac{1}{2}$ of an inch long, and just as red as can be.

What are these false thongs on my bees' feet? Are they Nature or not?

WEST VIRGINIA.

ANSWER.—I think what you call "false thongs" must be the pollen masses from milkweed. In some cases it gets so bad that the bees can hardly climb upon the combs, and I have seen the other bees drive them out of the hive. Sometimes the bees are fastened upon the blossoms, not being able to tear away, and if you examine the milkweed blossoms in your vicinity, you may find some dead bees upon them. But these plants are good honey-plants, and perhaps in this way pay for the injury done to the bees.

to feed for winter or spring without disturbing the cluster.

Regarding Mr. Hopkins statement on page 9 (March number), it may do to have the covers sealed down tight in his locality. I am certainly in harmony with the statement on page 79 of the same number, "Ventilation of Hives," as I find it best for this location.

F. LANGOHR.
Columbus City, Ind.

Prospects in Iowa

The fine rain we are having today will lengthen the honey-flow well into July, and possibly to August. I never saw bees do more and better super work than they did this spring. I am enclosing a picture of my self, team and two swarms of bees. I had just come home from inspection work. One of the swarms I shook into a nail-keg, and covered it over with a gunny-sack, and on the other one I drew a large gunny-sack over the limb of bees, and cut the limb and tied them on the side of the buggy. This saved time and bother, for I did not have to take the second trip after my bees, and have to wait for them to settle in a hive.

There is a great deal of foul brood in southeastern Iowa. I find the bee-keepers are very glad to co-operate with me in trying to wipe it out.

J. W. STINE.
Salem, Iowa, June 20.

Uses Smoke for Introducing

I am introducing all my queens this season by smoking. All thanks for that article in the American Bee Journal of last October, by Arthur C. Miller. It seems to me to be the most logical of all ways. It is a wonder it was not thought of before. I have run in 5 so far, and they seem perfectly at home. I give them perhaps a little more smoke than he suggests after she runs in.

It is a most disappointing season so far; such cold winds and the clover is in bloom. Some days it is too cold for bees to fly. No honey gathered yet.

R. HUNT.
Halifax, N. S., June 10.

A Good Report

I have sold so far from 6 colonies of bees \$15 worth of honey, and with the clover crop not yet over, and the sweet clover and fall blossoms yet to come, may reasonably expect to get as much more. Most of my honey is produced in shallow extracting frames, and sold as bulk comb honey, though I have also sold more or less in sections and in the extracted form.

C. KOELLE.
Hamilton, Ill., July 7.

Many Swarms in Washington

Bees came from their winter quarters in fair condition, and prospects are good so far. I have had more swarms this spring than usual—11 from 28 colonies. I usually get 3 or 4. Some queenless colonies I had to double up in the early spring. I had only 28 colonies for a spring start.

O. K. RICE.
Grays River, Wash.

Report from Oklahoma

Bees came through the winter in good shape, and are doing well. There is just enough of a honey-flow to cause fast breeding and lots of swarming.

R. B. CAMPBELL.
Anadarko, Okla.

Bees Doing Well

Bees have certainly done fine this year. This is the greatest season we have had for some time. Bees wintered well and bred up fast in the spring, and were ready for the great flow which has come.

R. J. HUDSON.
Lebanon, Tenn., June 28.

Much Honey in Kentucky—Hybrids Best

Bees in this locality are "making things hum." White clover, which is usually in full bloom about May 15, is about eight days ahead of schedule time. I have kept bees here for 15 years, but have seen nothing like the present flow from white clover. I produce "chunk honey" exclusively. The inside of the frames is the same size as a sheet of surplus foundation. When one of those frames is full it will weigh about four pounds. I retail all the honey I can pro-

REPORTS AND EXPERIENCES

Prime Swarm on Parent Stand

In the article by me in the American Bee Journal for July, page 244, under heading of "Prime Swarm on Parent Stand," if you will read the third paragraph carefully and apply the rule of grammar strictly pertaining to a pronoun standing for the noun immediately preceding it, you will read that it was the parent colony that was moved away. How could the parent colony send out a second swarm in 50 hours and no queen to lead them? A virgin queen could not have left $\frac{1}{2}$ frames filled with eggs. Anyhow, on that supposition, the article would fall flat and not be worth the reading, much less the writing. No, don't make any mistake, it was the prime swarm that came out the second time, and certainly did not get as much gain from the parent colony as

must have filled more than 20 Langstroth frames during June. WESLEY L. ROBERTS.
Lime Ridge, Wis., July 7.

[We acknowledge error on our part in having put the wrong interpretation on Mr. Roberts' explanation.—EDITOR.]

One Way to Pack Bees for Winter

I moved 5 colonies of bees 5 blocks with success in every way. It turned suddenly cold and not a bee was flying. The way I prepare my bees for winter is as follows: I set the hives in small houses which hold two hives. I bridge over the entrances 4 inches from the bottom-boards, then pack planer shavings all around the hives 6 or 8 inches thick. Next I put a $\frac{1}{2}$ -inch board over the



ASSISTANT INSPECTOR FOR IOWA, MR. J. W. STINE, OF SALEM.

it would if I had left it (the parent colony) the usual 8 days.

I am using that method altogether this season, where they swarm in spite of all I can do, only I break up, double up, or use the brood where I can. I have only increased from 41 to 52, and have queens that

brood frames. It is raised $\frac{1}{2}$ inch above the same. This board has a 5-inch hole in the center, with 2 oblong holes 2x7 at each side. These are covered with 2 thicknesses of burlap; then over the whole I put 2 thicknesses of carpet. The hole in the center is 5 inches in diameter, and is very convenient



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duce at 20 cents per pound. My supers are $\frac{5}{8}$ inches deep, and hold 10 or 11 of these frames.

There are two reasons why I follow this plan in the management of comb-honey production. It reduces swarming to the lowest percent in the production of comb honey. The air in the brood-chamber finds an easy means of escape up through these long frames, and is, therefore, a greater relief to the colony than a super of sections can afford.

When the first super is about full, another is set on top, never under. I find, after a very fair trial, the supers are filled much better in using this plan than they are when the empty one is put under the full one. Each added super furnishes the bees additional ventilation—prevents the swarming fever. Now, I have had hives setting side by side with no very marked difference in strength or other particulars except the difference in the frames and sections I have mentioned, but the supers containing the frames outweigh the others from 5 to 10 pounds in each instance.

Another fact I desire to relate: I have some "pure bloods" and several crosses between them and the common or blacks. Well, this cross, crossed, or hybrids, as they are called, simply work all around the "pure stock." One black queen in particular has outstripped the others to an extent that one would have to see to believe.

These hybrids have been "on the rush"

from the very commencement of the flow, but not one of them has thus far swarmed (June 8), while the others have swarmed, some of them, three times.

I bought several queens last year from a reliable breeder, and I am sure his stock is as represented so far as the race of bees is concerned, but the truth is this hybrid neighbor excels in honey gathering.

E. I. SMITH.

Bowling Green, Ky., June 8.

A Missouri Letter

I notice in the July number of the American Bee Journal what Mr. John H. Lovell says in regard to bees not getting any honey from corn tassels. I cannot agree with him, as I have seen bees work on corn tassels often, and once we extracted just after the bees had been working on the tassels quite profusely. I wished to get that honey off so as not to get it mixed with the Spanish-needle that was coming on. We got about 300 pounds of this honey, and when tasting it we thought it would be of no use except to feed back to the bees in the spring, but along late in the winter we tasted it again and found it to be of very good quality.

Mr. E. S. Miles says dandelion yields but little honey. It yields honey here. It comes very early, when the bees do not have anything else to work on.

Some parts of our State have had a splen-

did honey-flow. Foul brood is very bad in many places in our county, and the inspector has more than he can get around to. There is scarcely nothing done to eradicate the disease in our county so far as I know. The inspector has been here several times, but he only gives instructions how to treat the bees. He has so many places to go, and but few follow instructions. I doubt if there is one-fourth the bees in our county that we had 4 or 5 years ago. More co-operation among the bee-keepers of the State and a larger appropriation will have to be had. More work must be done in the future if we are ever to keep foul brood from destroying all the bees in the State.

It is astonishing how few of the bee-keepers take any interest in securing the much needed laws to eradicate bee-diseases. But few will lift their smallest finger to help in getting the service of the inspector, or any laws on bee-keeping, if it costs them anything at all. This works a hardship on the few that have to do all to secure these much needed laws.

J. W. ROUSE.

Mexico, Mo.

Good Flow from Sweet Clover

We have had, and are still having, an uncommon honey-flow from sweet clover. Something we have never had here, to my knowledge, before.

JAMES CIVIS.

Belle Plaine, Iowa, July 15.

Classified Department

[Advertisements in this department will be inserted at 15 cents per line, with no discounts of any kind. Notices here cannot be less than two lines. If wanted in this department, you must say so when ordering.

BEES AND QUEENS.

NUTMEG ITALIAN QUEENS, leather color. After June 1, \$1.00. A. W. Yates, Hartford, Conn.

GOLDEN QUEENS that produce 5 and 6 band bees. Untested, \$1.00; Tested, \$3.00. 1A9t Robert Inghram, Sycamore, Pa.

FOR SALE—Pure Italian Queens, by return mail; no disease. C. M. Scott & Co., 1004 Wash. St., Indianapolis, Ind.

BEES AND QUEENS from my New Jersey apiary. J. H. M. Cook, 70 Cortland St., New York City.

FOR SALE—Choice Golden Queens that produce Golden bees equal to any. Wm. S. Barnett, Barnett's, Virginia.

FOR SALE—Golden untested queens 70 cts. each, or \$7.25 a dozen. Safe arrival guaranteed. D. F. Talley, R.F.D. 4, Greenville, Ala.

HARDY Northern-reared Queens of Moore's strain of Italians; ready June 15. Untested, \$1.00; 6 for \$5.00; 12 for \$9.00. See testimonial on page 210. P. B. Ramer, Harmony, Minn.

VIRGINIA three-banded Italian queens. Untested, 75 cts. Tested \$1.00. All dead queens replaced free. Ready May 15. 6A4t S. Click, Box 16, Rt. 2, Mt. Jackson, Va.

DAY-OLD Virgin Queens will please you. Good way to get fine Italian stock; 50 cents each; \$5.00 per doz. Untested, \$1.00. Tested, \$1.50. Geo. H. Rea, Reynoldsville, Pa.

IMPROVED golden-yellow Italian queens for 1913; beautiful, hustling, gentle workers. Send for price list. E. E. Lawrence, 1A5t Doniphan, Mo.

FOR SALE—Untested queens that produce, 75c; tested, \$1.00; hybrids, 30c. S. H. Rickard, 5A3t 506 Machesney Bldg., Pittsburgh, Pa.

ITALIAN QUEENS by return mail. Untested, one, 75c; six, \$4.25; doz., \$8.00. Tested, one, \$1.25; six, \$6.50; doz., \$12.00. 8A1t L. E. Altwein, St. Joseph, Mo.

WILL REQUEEN part of my colonies with Adels. Queens removed are of the Golden

Italian strain. I offer the one-year old for 50c; this season's for 75c; virgins, 40c. J. T. Elkinton, Jennings, La.

FOR SALE—Fine Golden Italian queens; no foul brood here. Tested, \$1.00 each; select tested, \$1.25 each. Untested, one, 60c; doz., \$7.00. D. T. Gaster, 8A1t Rt. 2, Randleman, N. C.

FOR SALE—Untested Golden Italian queens 50c each; 4 hybrid queens, \$1.00. 8A2t J. F. Michael, Winchester, Ind.

FOR SALE—300 colonies of bees and equipment. Excellent location. Paying proposition. 8A1t F. W. Pease, Lansing, Iowa.

QUEENS—Improved red-clover Italians, bred for business; June 1 to Nov. 15. Untested queens, 75c; select, \$1.00; tested, \$1.25 each. Safe arrival and satisfaction guaranteed. 1A1y H. C. Clemons, Boyd, Ky.

UNTESTED Dark Italian Queens; Howe strain, select mated. No other bees in mating distance. Send for circular. One for \$1.00; 6 for \$4.50; 12, \$8.50. Orders filled by return mail. D. G. Little, Hartley, Iowa.

ITALIAN QUEENS—3-band bred from the best stock procurable for honey-gathering qualities. Untested, June, \$1.00; after, 75c. Tested, \$1.50; select, tested, \$2.00. 5A4f R. A. Shults, R. F. D. 3, Cosby, Tenn.

FINE ITALIAN QUEENS—Three-banded. Especially prolific, hardy, and gentle. Unexcelled as honey gatherers. You will make no mistake if you order them. "Come early and avoid the rush." \$1.00 each; 6 for \$5.50. 6A4t J. F. Archdekin, Rt. 7, St. Joseph, Mo.

GOLDEN QUEENS that produce Golden Workers of the brightest kind. I will challenge the world on my Goldens and their honey-getting qualities. Price, \$1.00 each; Tested, \$2.00; Breeders, \$5.00 and \$10.00. 2A1f J. B. Brockwell, Barnetts, Va.

MONTANA QUEENS, bred in the Musselshell Valley. No other bees within 60 miles; foul brood unknown; all queen candy boiled. Three-banded Italian queens ready June 1. Untested, \$1.00. Tested, \$1.50. Orders booked now. 6A4t Elso Apriary, Elso, Mont.

SPECIAL—Golden all-over queens that produce workers of the brightest kind. 5000 mated queens was my sales last season. Untested queens each 75c; 50, \$32.50; 100, \$60.00. Tested, \$1.25. Select-Tested, \$2.00. Breeders, \$5.00 and \$10.00. J. T. Dunn, Queen Breeder, 6A7t Rt. 3, San Jose, Calif.

UNTESTED ITALIANS of J. P. Moore's and Doolittle's stock; 60c apiece; \$5.00 a dozen.

No disease; safe arrival guaranteed. 6A3t Edward O. Meserve, Ventura, Calif.

THE TWO B's of quality—Italian Bees and Sicilian Buttercups. For all that is best, unexcelled. Untested queens \$1.00 each; six for \$5.00; 2-frame nucleus with untested queen, \$3.00; 3-frame nucleus, \$4.00. Buttercup eggs and stock in season.

6A4t H. William Scott, Barre, Vermont.

GOLDEN and 3-band Italians, also gray Carniolan queens. Tested, \$1.00 each; 3 or more 60c each. Untested, 75c each; 3 to 6, 70c each; 6 or more, 85c each. Bees per lb., \$1.25; nuclei per frame, \$1.50. A discount on orders booked 30 days before shipment.

1A1f Bankston & Lyon, Buffalo, Leon Co., Tex.

QUIRIN's famous improved Italian queens, nuclei, colonies, and bees by the pound, ready in May. Our stock is northern-bred and hardy; five yards wintered on summer stands in 1908 and 1909 without a single loss. For prices, send for circular. Quirin-the-Queen-Breeder, Bellevue, Ohio.

GOLDEN and 3-band Italians, also gray Carniolan queens. Tested, \$1.00 each; 3 or more 60c each. Untested, 75c each; 3 to 6, 70c each; 6 or more, 85c each. Bees per lb., \$1.25; nuclei per frame, \$1.50. A discount on orders booked 30 days before shipment.

3A1f C. B. Bankston, Buffalo, Leon Co., Tex.

MOORE'S Strain and Golden Italian Queens. Untested, \$1.00; six, \$5.00; twelve, \$10.00. Carniolan, Banat and Caucasian Queens, select, \$1.25; six, \$6.00; twelve, \$10.00. Tested, any kind, \$1.50; six, \$8.00. Choice breeders, \$3.00. Circular free. W. H. Rails, Orange, Calif.

ONE of our customers (J. A. Carnes, M. D., Mt. Carmel, Pa.) writes: "Your bees are evenly marked; all golden but the tip. They are the most GENTLE bees I ever handled." Untested queens, \$1.00 each. Send for wholesale prices.

C. W. Phelps & Son, 3 Wilcox, St., Binghamton, N. Y.

THREE-BANDED Italian Queens and Bees. Untested queen, 75c each; six, \$1.25; twelve, \$2.00. Tested, \$1.25 each; six, \$7.00; twelve, \$12.00. For select queens add 25c each to the above prices. Nuclei without queens, 1-frame, \$1.50; 2-frame, \$2.50; 3-frame, \$3.00. 1-lb. bees, \$1.50; ½-lb. bees, \$1.00. Add price of queen wanted with bees.

Robert B. Spicer, Wharton, N. J.

WE will queen all our 2000 colonies this spring with young queens bred from our best home and imported Italian stock. We offer the one-year old queens removed from these hives at 40c each; untested queens, this year's breeding, 60c each. Special reduced prices for 100 or more, either old or young. We breed for business, not look

American Bee Journal

No disease; delivery guaranteed. Book orders now to insure early delivery.
Spencer Aparies Co., Nordhoff, Calif.

CHOICE QUEENS from June to Sept. 1 at \$1.00 each; six for \$5.00. Place orders now, and have them filled in rotation.
D. J. Blocher, Pearl City, Ill.

FOR SALE—Guaranteed pure-mated 3-band Italian queens. I recommend 4 points: Gentle, prolific, extra good honey makers, good winterers. J. E. Hand strain. State Inspector's certificate. Queens by return mail or your money back. Select untested, 1, 80c; 6, \$4.00; 12, \$8.00; 25, \$15.00.
J. M. Gingerich, Rt. 3, Arthur, Ill.

MURRAY's famous North Carolina bred Italian queens (red clovers and goldens) for sale again. As good as the best; no foul brood known. They are as good honey-gatherers as can be obtained, and winter as well. My improved strain is carefully selected, and bred up from Moore's, Root's, and Davis' improved stock. Select untested, one, 75c; doz., \$8.00. Tested, \$1.25. Select tested, \$1.50; extra select tested, \$2.00. Breeders, \$3.00 and \$5.00.
H. B. Murray, Queen-breeders, Liberty, N. C.

HONEY AND BEESWAX

"NULL'S FAMOUS MELILLOTUS HONEY." Sample for stamp. Null Co., Demopolis, Ala.

WANTED—Comb, extracted honey, and beeswax.
R. A. Burnett & Co.,
6A12t 173 S. Water St., Chicago, Ill.

FOR SALE—Fine, Rich, Pure White Clover Honey; also Light Amber Alfalfa. Put up in any size packages, any quantity. Write for prices.
11Atf Dadant & Sons, Hamilton, Ill.

FOR SALE

FOR SALE—Empty second-hand 60 lb. cans—two cans to the case, good as new, 25 cents per case.
C. H. W. Weber & Co.,
2146 Central Ave., Cincinnati, Ohio.

FOR SALE—Fine Italian queens; untested, 75c; \$8.00 per dozen; tested, \$1.00; breeders, \$1.00. Nuclei, \$1.25 per frame. Full colonies in new modern eight-frame hives, \$7.00.
California Bee Co.,
500 S. Rowan Ave., Los Angeles, Calif.

FOR SALE—Apiary and small well-established plant of fancy poultry near Chicago. Good House, Poultry, and Bee buildings. Good water, fruit, shade-trees, and berries. Best location for bees and out apiaries, if desired. Reason for selling, death in family. Price, \$2000. If interested, write.
8Atf P. Augustin, Rt. 1, Orlando, Ill.

FOR SALE 20 Horse Power I. H. C. Delivery Truck; good as new; in fine condition and running order. Will be sold at a bargain.
L. Werner, Edwardsville, Ill.

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BEE-SUPPLIES—none better. 35 years of experience.
1 Ideal Winter-Case, complete..... \$2.50
100 Hoffman Brood-Frames in flat..... 2.50
500 No. 1 Sections..... 2.50
100 Section-Holders, scalloped..... 2.00
100 Section-Slats, 1/4 inch..... 1.00
1 Champion Smoker..... .70
DADANT'S FOUNDATION.
Medium Brood, per pound..... .50
Thin Surplus " " 66
Extra Thin " " 69
Discount on larger amounts.
Satisfaction guaranteed or money refunded.
R. H. Schmidt,
R. R. No. 3, Box No. 200. Sheboygan, Wis.

BEE-KEEPER, let us send our catalog of hives, smokers, foundation, veils, etc. They

are nice and cheap.
4Atf White Mfg. Co.,
Greenville, Tex.

FOR SALE—Bees, Honey, and Bee-Keepers Supplies. A. E. Burdick, Sunnyside, Wash

POULTRY

FOR SALE—Buff Orpington eggs, pure bloods: \$1.00 for 15. Satisfaction guaranteed.
2A1y W. H. Payne, Hamilton, Illinois.

HONEY LABELS

HONEY LABELS.—Bronzed Honey Labels
500 for 80c; 1000 for \$1.10.
8A1t Pearl Card Co., Clintonville, Conn.

THE NUMBER of enquiries coming in for honey labels has been so large that we have decided to put in a stock of these for the convenience of our readers. Should you be in need of anything in this line, send for a copy of our label catalog, which will be sent free.
Hamilton, Ill.

SITUATIONS.

YOUNG MARRIED MAN wants steady employment in apiaries; 12 years' experience. Furnish best of references. Will go anywhere.
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REDUCED PRICES on Eggs, Chicks, Ducklings, White Leghorns, Penciled or Faun Runners. Free circular. Could use Italian Queens or Bees in exchange.
6A1t R. O. Dickson, Box 61, La Harpe, Ill.

FOR GOOD QUEENS AND QUICK SERVICE, you can't do better than place your order with me. I am prepared to handle any size of order at the following prices (Carniolan, 3-band Italian and Golden): One untested queen, \$1.00; six for \$5.40; twelve for \$10.60. One tested queen, \$1.50; six for \$8.40; twelve

for \$15.60. One-frame nuclei, untested queen, \$2.50; six 1-frame, \$15.00; one-frame nuclei, tested queen, \$3.00; six 1-frame, \$17.40. Full colonies, one for \$7.50; two for \$14.00. If more frames are wanted than are listed, add \$1.00 each for as many frames as are wanted with nuclei. No disease, and satisfaction guaranteed.
W. J. Littlefield,
1015 W. 7th St., Little Rock, Ark.

GRAY CAUCASIANS

I was the first to import the true Gray Caucasian Bee into the Occident. They are bred under my instructions in the Caucasus Mts. expressly for me. Their WORTH is unexcelled. Send for prices to

A. D. D. WOOD

Box 61, Lansing, Mich., or
Box 82, Houston Heights, Texas

P. S.—They are a true race, and not made by Man.

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Italian bees & queens. If you need a fine yellow Queen quick, try Fajen and you will order more. Extra fine queen, only \$1.00; untested, 75c. 3-fr nucleus, only \$2.75. Full colony in 8-fr. hive with fine tested queen, \$5.50.
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A new magazine owned and run by the bee-keepers, filled with Western life as depicted by the best talent on bee topics obtainable. Special department on crop and market conditions during season.

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1 inch, \$2.00 per issue

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Per case of 24, 12-oz. bottles.....	.60
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We are closing out our stock, and the above prices will hold good only while the stock lasts.

We will ship from Detroit, Mich., or Minneapolis.

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One-piece cover and bottom, complete with 2-inch glass, paper, nails, corrugated paper, or no-drip strips in the bottom. Prices, f. o. b. Minneapolis.

25 cases, holding 24 sections, K. D.	\$ 4.00
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1 1/4-inch screw cap opening, 10 boxes, 2 cans in a box.....	\$ 7.50
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10-lb., with bail, per 100.....	\$ 6.50
5-lb., with bail, per 100.....	4.75
5-lb., with bail, per 200.....	9.00

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Miller's Strain Red-Clover Italian Queens

By Return Mail or Order Returned

Bred from superior breeders for business; gentle; no better hustlers; bees roll honey in; three-banded; Northern bred; hardy and vigorous; winter well; not inclined to swarm; bred from best leather-colored strains. Untested, 75 cts.; six, \$1.00; dozen, \$7.50. Select untested, \$1.00; six, \$5.00; dozen, \$9.00. Satisfaction guaranteed.

Isaac F. Miller, queen specialist and breeder for sixteen years, previously of Brookville, Rt. 2, Reynoldsville, and lately of Oil City, Rt. 2, Pa., is agent and breeder for E. L. Miller. Send all orders to

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An apiary of 40 colonies of pure Italian bees in a suburb of Chicago. A good location for rearing and mating queens. Right in a good sweet clover part. About 30 full depth extracting supers. A few comb honey supers. Honey extractor. Large storage cans, and all other fixtures needed to run an apiary. All bees in our 10-frame Eclipse hive. Write for particulars, prices, etc. No disease. F. A. SNELL, Milledgeville, Ill.

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ITALIANS! CARNIOLANS! BANATS!

Are Ready to Mail

PRICES:

Untested - - - 75c Each
\$8.00 per doz.
Tested - - - \$1.25 Each
\$12 per doz.

Circulars Free

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SAN BENITO, TEXAS.

PHARR'S GOLDEN AND THREE BANDED ITALIANS

Untested - - - \$1.00
Tested - - - \$1.25
Breeders \$3 to \$5.00

We have 50 Golden and Three Band Breeders. Can mail from April 1 to 15. Place your orders now. Address,

JOHN W. PHARR,
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Read what J. L. PARENT, of Charlton, N. Y., says: "We can, with one of your Combined Machines, last winter, 50 shaft hives with 7-in. cap, 100 honey-racks, 500 brood-frames, 2,000 honey-boxes, and a dozen doz. of other work. This winter we have double the amount of bee-hives, etc., to make, and we expect to do it with this Saw. It will do all you say it will." Catalog and price-list free.

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My bees are the product of many years of breeding by both Swarthmore and Henry Alley. Both names stand out like beacon lights among our past and present breeders, for the best queens ever produced in the United States. Never had foul brood.

SWARTHMORE APIARIES, Swarthmore, Pa.

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Are now sending out untested Italian queens at \$1.00 each, \$9.00 a doz. Headquarters for breeding queens.

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Ideal site for residence or apiary. Bees need not be fed in winter, 20 acres, of which 12 are eucalyptus trees, irrigable, situated in the heart of alfalfa, fruit and grape center. Congenial climate; close to school; suburban electric line; power and phone; nice and quiet neighborhood. Best of references. Reason for selling, death in family. H. Stolzel, (owner) Manteca, Calif.

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Room's GRAND RAPIDS MARKET TOMATO originated by Mr. George E. Room, the Editor of THE FRUIT BELT, America's Greatest Fruit Magazine. This is the very earliest of the heavy cropping varieties, it yields abundantly, a Grand Shipper, and makes a fine canner. Tomato ever set upon the market. In size, the individual fruits will average a half-pound each, and are very uniform in shape, size, and color. There are few seeds, as the tomato is a determinate variety. It is a good market tomato, and will be a success in any garden. The seeds are to be had from Seedmen, as we send the entire packet. We are giving it away to introduce THE FRUIT BELT, and you can get a packet, if you act now.

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THE FRUIT BELT R.112, HAWKINS BUILDING GRAND RAPIDS, MICHIGAN



American Bee Journal



"falcon" QUEENS



Three-Band and Golden Italians, Caucasians and Carniolans

July 1st to October 1st	1	6	12
Untested	\$.75	\$4.25	\$ 8.00
Tested	1.00	5.50	10.00

Tested, \$1.50 each; and Select Tested, \$2.00 each.

All queens are reared in strong, vigorous colonies, and mated from populous nuclei. Instructions for introducing are to be found on the reverse side of the cage cover.

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"falcon" foundation is coming in more constant use every year, being adopted by the largest and most prominent bee-keepers in this country, to say nothing of those in foreign lands where our foundation is largely used. We feel confident that after you have used one lot of "falcon" foundation, which is made in our plant at Falconer, N. Y., you will purchase it in the future, and are sure that you and your bees will be pleased with it in every respect.

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Aprox. Capacity	Per 100 Lots of 50	Per 100 Lots of 100	Per 100 Lots of 500	Per 1000 Lots of 1000
2-lb. Can	\$2.25	\$2.15	\$20.00	
2½-lb. "	2.75	2.60	24.00	
3-lb. "	3.00	2.85	28.00	
5-lb. Pail	\$5.00	4.75	4.50	42.50
10-lb. "	7.00	6.50	6.25	60.00
12-lb. "	7.25	6.75	6.50	62.50

If not a member, send a dollar extra with your first order, which will pay your dues for a year, and we will send you the *Bee-Keepers' Review* for the last half of 1913, giving the first six articles of that sensational series of ten articles. "The Management of 3000 Colonies in 50 Yards;" also the April and May numbers of the *Review*, containing the report of the National meeting at Cincinnati, these two numbers alone containing 66 pages. A cordial invitation is extended to all bee-keepers to join the National at this time. Address, with remittance, **The National Bee-Keepers' Association, Northstar, Mich.**

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They are the Finest in the Land—
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AUG. LOTZ & CO.
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Please mention Am. Bee Journal when writing.

W.H.Laws

Will be ready to take care of your queen orders, whether large or small, the coming season. Twenty-five years of careful breeding brings Laws' queens above the usual standard; better let us book your orders now.

Tested queens in March; untested, after April 1st. About 50 first-class breeding-queens ready at any date.

PRICES: Tested, \$1.25; 5 for \$5.00; Breeders, each \$5.00. Address

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Those queens are bred from best imported strains. If any queens should prove to be impurely mated, we will replace them free of cost. Prices:

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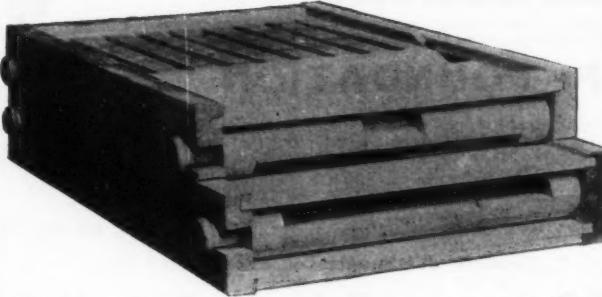
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BY MAIL Has your "forgettery" been working? And right this minute you need foundation or other items. See page one of our catalog, and it gives parcel post rates on various articles.

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Your Name and Address will be put on one side of the handle as shown in the cut, and on the other side a picture of a Queen-Bee, a Worker-Bee, and a Drone-Bee. The handle is celluloid, and transparent, through which is seen your name. If you lose this Knife it can be returned to you, or it serves to identify you if you happen to be injured fatally, or rendered unconscious. The cut is the exact size; it is made of best steel. When ordering be sure to write exact name and address. Knife delivered within two weeks after we receive order.

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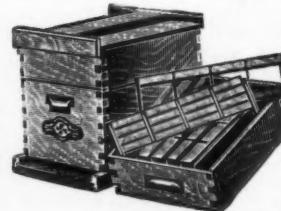
Nucleus	Fr.	with Untested Queen	\$1.75
"	1 "	Tested	2.00
"	2 "	" Untested "	2.25
"	2 "	Tested "	2.50

1 Untested Queen, 75c; 6 for \$4.20
1 Tested " \$1.00; 6 " 5.70

Golden Queens or 3-Banded Queens

No one will give you better or quicker service.

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SAVES { **HONEY** **TIME** **MONEY** } AT ALL DEALERS

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If your Dealer does not keep them, order from Factory, with complete instructions.

R. & E. C. Porter, Mfrs.
Lewistown, Illinois

3-Band Long-Tongued

Red Clover Italian

QUEENS

FOR SALE.—The 3-band queens are of the A. I. Root Co.'s improved long-tongued bees which have proven themselves to be the best of honey-producers. I use the Doolittle and Miller plans for queen-cells. One untested queen, 75 cts: 6 for \$4.00; 12 for \$7.50; 25 for \$13.50; 50 for \$25.00; 100 for \$45.00. Double this price for tested queens. One-frame nucleus, \$1.50; 2-frame, \$2.50; 3-frame, \$3.50. To each nucleus add the price of queen. No personal checks accepted.



J. B. ALEXANDER, CATO, ARK

ROOT'S POWER HONEY-EXTRACTORS

Our new catalog is full of information about these labor-saving machines. With the difficulty of getting competent help, the power extractors are being sold largely in this and foreign countries, and the present demand is far greater than ever before. Read what a California producer says in a letter to a disinterested party, which we were permitted to publish:

GENTLEMEN:—I should like to say a few words in favor of the ball-bearing Root Automatic Extractor, as I believe it is as near perfection as it can be. This machine runs so easily that a few turns to get it up to speed is all that is necessary; and the men, while using the No. 17, which I formerly had, could average only 100 lbs. per day, while with this machine they can average 2000 lbs. with but one additional man. No apiary can afford to be without one of these machines.

I feel like congratulating The A. I. Root Co. for making an invention that is such a satisfaction, financially to the honey-producers' interests.

B. B. HOGABOOM, Elk Grove, Calif.

—HERE ARE A FEW MORE—

A word about the power extractor I purchased from you through H. L. Jones, of Goodna. I found it to work very satisfactorily, and it will do all it is claimed to do and more. I use the gasoline engine for several purposes besides driving the eight-frame extractor, such as driving the washing-machine for the lady of the house, and corn cracking and grinding. I consider it one of the best speculations I made in connection with the apiary.

F. C. GOLDER, Pittsworth, Queensland.

Yours of the 6th, also the brake-band for power-extractor, came to hand. Thanks for sending it so promptly. This is my second season with the power extractor. I would not like to be without it now, even if I had only fifty colonies.

DAVID RUNNING, Grindstone City, Mich., July 10, 1910.

I received the extractor I ordered of you some time ago. It arrived in good shape. I set it up and extracted 143 quarts of honey, sold it at 35 cents a quart. The extractor is just fine—does the work completely.

F. D. KING, Athens, Ohio, Aug. 16, 1912.

The engine I got of you this spring has done fine. We ran it all fall, and never had any trouble at all.

V. V. DEXTER, North Yakima, Wash., Jan. 19, 1911.

For Full Particulars See Our Catalog

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RAMER'S QUEENS Of Moore's Strain of Italians

Ready June 15

Untested, \$1.00; 6 for \$5.00; 12 for \$9.00

April 28, 1913.

P. B. RAMER, Harmony, Minn.—
Dear Sir:—The 30 queens I got of you in 1911 were the best queens; built up the fastest, and gave the largest yield of honey I have had in twenty years of bee-keeping. My average was 160 lbs. to the colony in 1912, and I lost a part of the flow for want of super room.

Yours very truly,
HALVERSON.

Rt. 4, Preston, Minn.



ITALIAN BEES Choice Home Bred and Imported Queens

Reared in full colonies
Prices for August:
One untest. queen \$.90
One tested queen \$1.30
One select tested
queen - - - - - \$1.60
One Breeder - - - - \$2.45
One comb Nucleus,
no queen - - - - - \$.00

½ lb. bees, \$.00; 1 lb. \$1.75.
Safe arrival guaranteed. For description
of each grade of queens send for free catalog.

J. L. STRONG,
204 E. Logan St.,
CLARINDA, IOWA

QUEENS OF MOORE'S STRAIN OF ITALIANS

PRODUCE WORKERS

That fill the supers quick
With honey nice and thick.
They have won a world-wide reputation
for honey-gathering, hardness,
gentleness, etc. Untested queens, \$1;
six, \$5; 12, \$10. Select untested, \$1.25;
six, \$6.00; 12, \$11. Safe arrival and satisfaction
guaranteed. Circular free.

J. P. MOORE, Queen-breeders,
Route 1, Morgan, Ky.

Try My Famous Queens From Improved Stock.

The best that money can buy; not inclined
to swarm, and as for honey gatherers they
have few equals.

3-Band, Golden, 5-Band and Carniolan

bred in separate yards, ready March 20,
Untested, one, \$1. six, \$5; 12, \$9; 25, \$17.50; 50,
\$34; 100, \$65. Tested, one, \$1.50; six, \$8; 12,
\$15. Breeders of either strain, \$5. Nuclei
with untested queen, one-frame, \$2.50; six
one-frame, \$15; two-frame \$3.50; six two-frame
\$20.40; nuclei with tested queen, one-frame,
\$3.00; six one-frame, \$17.40; two-frame, \$4; six
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ALBERT G. HANN,
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American Bee Journal

HONEY AND BEESWAX

CHICAGO, July 18.—Receipts have been quite free for this season of the year, both in comb and extracted. The market is not active, but the quality of the honey is excellent. Prices are ranging for the A No. 1 to fancy comb 16@17c. and extracted 9@10c for the clover and lindens. Amber grades and other white grades 7@8c. Beeswax steady at from 30@32c, according to color and cleanliness.

R. A. BURNETT & CO.

CINCINNATI, July 19.—Many shipments of both comb and extracted honey are coming in from all directions, and it is the early shipper who will get the best prices this year. Fancy extracted honey is selling in this market at 8@9c a pound in 16 pound cans, and fancy and No. 1 comb honey at 12@15c a pound, according to the quality and quantity purchased. For choice bright yellow beeswax we are paying 30c a pound delivered here. THE FRED W. MUTH CO.

BOSTON, July 19.—Fancy and No. 1 white comb, 16@17c per pound. Fancy white extracted in 5-gallon cans, 11@12c. Beeswax, 30c. BLAKE-LEE COMPANY.

NEW YORK, July 18.—There is no new nearby comb honey on the market as yet; some few shipments have been and are arriving from the South and selling at from 12@16c per pound, according to quality and style of package. Of course, it is rather early as yet for us to expect to have new crop comb honey from New York State and nearby, and it may be another month from now before we will receive the first shipments. In fact, the season is not over yet

and from reports we are daily receiving basswood seems to be now blooming, and promises a fair crop. There is a fair demand for extracted honey, principally new crop from the South, common grades selling at from 65@70c; choice grades at from 75@85c, and sometimes 90c per gallon. Old crop California is well cleaned up, and we do not expect new crop from there until next month. Beeswax steady at 31@32c per pound.

HILDRETH & SEGELEN.

SAN FRANCISCO, July 17.—The new crop is very late in materializing. Fancy water white 15@16c; dark to amber, 14@14½c per pound; water-white extracted, 9@9½c; light amber, 8@8½c; dark from 6@8c per pound. Beeswax 30@31c for nice yellow wax, and 24@29c for darker grades. Not much honey or wax is being offered.

JOHN C. FROHLIGER.

KANSAS CITY, Mo., July 15.—The receipts of new comb honey are more liberal, and up to date we have had no trouble to sell upon arrival at \$3.50 per case of 24 sections for No. 1 white, and \$3.00 to \$3.25 for amber. We quote white extracted at 8@8½c per pound. Beeswax at 25@28c per pound.

C. C. CLEMONS PRODUCE COMPANY.

DENVER, July 10.—A few cases of new crop comb honey are coming in, and bring \$3.50 for No. 1 white, and \$3.20 for choice in a jobbing way. Prospects at this writing are for a light crop in Colorado. We quote extracted honey in a jobbing way at the following figures: White, 9c; light amber, 8c; strained, 6½@7c. We pay 26c per pound in

cash, and 28c per pound in trade for clean yellow beeswax delivered here.

THE COLO. HONEY-PRODUCERS' ASS'N.

Frank Rauchfuss, Mgr.

INDIANAPOLIS, July 17.—A large crop of honey has been secured in the central States, but prices are not yet established. Much honey is being offered by producers, but they do not name any price. I think that within the next few weeks we will have established prices. Beeswax is in good demand, and producers are being paid 30c cash, or 32c in trade. WALTER S. PODER.

CINCINNATI, July 16.—There is very little doing in honey, both comb and extracted. No new honey has yet arrived. General conditions are good for a big crop.

C. H. W. WEBER & CO.

LOS ANGELES, July 15.—Since writing on June 30, quoting light amber honey at 6½c, we have received a good many offerings from the producers, and it is possible that the price named could be shaded at eighth of a cent per pound on firm offers.

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